#### **FACT SHEET**

as required by LAC 33:IX.3111 for major LPDES facilities, for draft Louisiana Pollutant Discharge Elimination System Permit No. LA0039748; Al 20037; PER20090002 to discharge to waters of the State of Louisiana as per LAC 33:IX.2311.

The permitting authority for the Louisiana Pollutant Discharge Elimination System (LPDES) is:

Louisiana Department of Environmental Quality

Office of Environmental Services

P. O. Box 4313

Baton Rouge, Louisiana 70821-4313

I. THE APPLICANT IS: City of Abbeville

Abbeville Wastewater Treatment Facility

P.O. Box 1170 Abbeville, LA 70511

II. PREPARED BY:

Afton J. Bessix

DATE PREPARED:

March 2, 2010

III. PERMIT ACTION:

reissue LPDES permit LA0039748, Al20037

LPDES application received: April 30, 2009

EPA has not retained enforcement authority.

LPDES permit issued: September 1, 2004 LPDES permit expired: August 31, 2009

#### IV. FACILITY INFORMATION:

- A. The application is for the discharge of treated sanitary wastewater from a publicly owned treatment works serving the City of Abbeville.
- B. The permit application does not indicate the receipt of industrial wastewater.
- C. The facility is located at 1908 East Lafayette St. in Abbeville, Vermilion Parish.
- D. The treatment facility consists of a gravity fed sewer with 25 lift stations. Screening, grit removal, followed by an extended aeration activated sludge process with final clairfication, and post aeration. Disinfection is by ultraviolet light.
- E. Outfall 001

Discharge Location:

Latitude 29° 58 17"North Longitude 92° 6 56 West

Description:

treated sanitary wastewater

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Design Capacity:

3.1 MGD

Although the design capacity has increased, the City of Abbeville received mass limits under the 1987 Vermilion River Watershed TMDL and limits will be based upon that flow, which is 2.6 MGD

Type of Flow Measurement which the facility is currently using:

Combination Totalizing Meter / Continuous Recorder

### V. RECEIVING WATERS:

The discharge is into the city drainage canal; thence into Youngs North Coulee; thence into the Vermilion River in segment 060802 of the Vermilion - Teche Basin. This segment is not listed on the 303(d) list of impaired waterbodies.

The critical low flow (7Q10) of the city drainage canal before flowing into Youngs North Coulee is 0.1 cfs.

The hardness value is 110 mg/l and the fifteenth percentile value for TSS is 2 mg/l.

The designated uses and degree of support for Segment 060802 of the Vermilion - Teche Basin are as indicated in the table below!

Overall Degree of Support for Segment	Degree of Su	ipport of Each	Use				
Partial	Primary Contact Recreation	Secondary Contact Recreation	Propagation of Fish & Wildlife	Outstanding Natural Resource Water	Drinking Water Supply	Shell fish Propagation	Agriculture
	Not Supported	Full	Not Supported	N/A	N/A	N/A	Full

<sup>&</sup>lt;sup>17</sup> The designated uses and degree of support for Segment 060802 of the Vermilion - Teche Basin are as indicated in LAC 33:IX.1123.C.3, Table (3) and the 2006 Water Quality Management Plan, Water Quality Inventory Integrated Report, Appendix A, respectively.

### VI. ENDANGERED SPECIES:

The receiving waterbody, Subsegment 060802 of the Vermilion - Teche Basin, is not listed in Section 11.2 of the Implementation Strategy as requiring consultation with the U. S. Fish and Wildlife Service (FWS). This strategy was submitted with a letter dated January 5, 2010 from Rieck (FWS) to Nolan (LDEQ). Therefore, in accordance with the Memorandum of Understanding between the LDEQ and the FWS, no further informal (Section 7, Endangered Species Act) consultation is required. It was determined that the issuance of the LPDES permit is not likely to have an adverse effect on any endangered or candidate species or the critical habitat. The effluent limitations established in the permit ensure protection of aquatic life and maintenance of the receiving water as aquatic habitat.

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### VII. HISTORIC SITES:

The discharge is from an existing facility location, which does not include an expansion beyond the existing perimeter. Therefore, there should be no potential effect to sites or properties on or eligible for listing on the National Register of Historic Places, and in accordance with the 'Memorandum of Understanding for the Protection of Historic Properties in Louisiana Regarding LPDES Permits' no consultation with the Louisiana State Historic Preservation Officer is required.

# VIII. PUBLIC NOTICE:

Upon publication of the public notice, a public comment period shall begin on the date of publication and last for at least 30 days thereafter. During this period, any interested persons may submit written comments on the draft permit to the LDEQ contact person, listed below, and may request a public hearing to clarify issues involved in the permit decision. A request for a public hearing shall be in writing and shall state the nature of the issues proposed to be raised in the hearing.

Public notice published in:

Local newspaper of general circulation

Office of Environmental Services Public Notice Mailing List

For additional information, contact:

Ms. Afton J. Bessix
Permits Division
Department of Environmental Quality
Office of Environmental Services
P. O. Box 4313
Baton Rouge, Louisiana 70821-4313

#### IX. PROPOSED PERMIT LIMITS:

Subsegment 060802, Vermilion River - From New Flanders (Ambassador Caffery) Bridge, Hwy. 3073 to Intracoastal Waterway, is not listed on LDEQ's Final 2006 303(d) List as impaired. However subsegment 060802 was previously listed as impaired for phosphorus, nitrogen (NITRATE + NITRITE AS N), organic enrichment/low DO, pathogen indicators, suspended solids/turbidity/siltation, and Carbofuran, for which the below TMDLs have been developed. The Department of Environmental Quality reserves the right to impose more stringent discharge limitations and/or additional restrictions in the future to maintain the water quality integrity and the designated uses of the receiving water bodies based upon additional TMDLs and/or water quality studies. The DEQ also reserves the right to modify or revoke and reissue this permit based upon any changes to establish TMDLs for this discharge, or to accommodate for pollutant trading provisions in approved TMDL watersheds as necessary to achieve compliance with water quality standards.

The following TMDLs have been established for subsegment 060802:

1999 Review and Assessment of the 1987 Vermilion River Watershed TMDL for Dissolved Oxygen

This TMDL was finalized January 19, 2001 and established a loading capacity equal to the 1987 Vermilion River Watershed TMDL for Dissolved Oxygen. This TMDL estimated the necessary reduction in nonpoint source loadings to accelerate progress toward full support of the DO standard. Since the TMDL did not require reductions in point source loadings, no additional permit requirements are included. However, the

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City of Abbeville received mass limits under the 1987 TMDL. Since then Abbeville has upgraded and increased the capacity of its treatment system. The facility was allowed to use half of the margin of safety originally associated with their system. The current permit limits were therefore set as follows:

#### PERMIT LIMITS

May – December: 7 mg/l CBOD<sub>3</sub>/ 3 mg/l NH<sub>3</sub>-N/ 5 mg/l DO
January – April: 14 mg/l CBOD<sub>3</sub>/ 7 mg/l NH<sub>3</sub>-N/ 5 mg/l DO

Additionally, in regard to nutrients such as nitrogen and phosphorous, LDEQ has determined that organic enrichment/DO directly correlates with overall nutrient impact. Thus, when organic enrichment/DO is limited (as with the established CBOD5/ NH3-N/ DO limits), LDEQ is also in effect limiting and controlling nutrient concentrations and impacts.

Therefore, this discharge will be permitted accordingly, and the permit maintains previously established limitations reflecting the above limits.

#### Vermilion River TMDL for Fecal Coliform

The Vermilion River TMDL for Fecal Coliform was finalized on April 5, 2001, addressing the presence of pathogen indicators in the watershed. As per this TMDL, "...there will be no change in the permit requirements based upon a wasteload allocation resulting from this TMDL." Therefore, Fecal Coliform effluent limitations will remain as previously established in this permit.

#### TMDL for TSS, Turbidity, and Siltation for the 15 Subsegments in the Vermilion River Basin

As per the TMDL finalized May 3, 2001, "Point sources do not represent a significant source of TSS as defined in this TMDL. Point sources discharge primarily organic TSS, which does not contribute to habitat impairment resulting from sedimentation. Because the point sources are minor contributors and discharges of organic suspended solids from point sources are already addressed by LDEQ through there permitting of point sources to maintain water quality standards for DO, the wasteload allocations for point source contributions were set to zero."

Therefore, TSS limits are being maintained as previously established in this permit according to the current state water quality standards.

#### TMDL for the Pesticide Carbofuran in the Mermentau and Vermilion-Teche River Basins

The TMDL for the Pesticide Carbofuran in the Mermentau River and Vermilion-Teche River Basins was finalized on March 21, 2002 and states "the one point source discharger, FMC Corporation's Agricultural Products Group plant (FMC) ... is the only known point source in the Vermilion-Teche Basin." As a result, the TMDL establishes a WLA for FMC only. Since this TMDL does not consider the City of Abbeville to be a contributing source, no additional permit requirements are included.

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#### Interim Effluent Limits:

# **OUTFALL 001**

Interim limits shall become effective on the effective date of the permit and lasting through three years after the effective date of the permit.

Effluent Characteristic	Monthly Avg. (lbs./day)	Monthly Avg.	Weekly Avg.	Basis
CBOD <sub>5</sub>				Limits are set in accordance
May - Dec.	152	7 mg/l	10 mg/l	with the 1987 Vermilion River Watershed TMDL for Dissolved
Jan. – April	304	14 mg/l	21 mg/l	Oxygen.
TSS May – Dec. Jan. – April	325 434	15 mg/l 20 mg/l	23 mg/l 30 mg/l	Since there is no numeric water quality criterion for TSS, and in accordance with the current Water Quality Management
				Plan, the TSS effluent limitations shall be based on a case-by-case evaluation of the treatment technology being utilized at a facility. Therefore, a Technology Based Limit has been established through Best Professional Judgement for the type of treatment technology utilized at this facility.
Ammonia-Nitrogen				
May - Dec.	65	3 mg/l	7 mg/l	Limits are set in accordance with the 1987 Vermilion River
Jan. – April	87	4 mg/l	8 mg/l	Watershed TMDL for Dissolved Oxygen.
Dissolved Oxygen		5 mg/l	N/A	Limits are set in accordance with the 1987 Vermilion River Watershed TMDL for Dissolved Oxygen and per EPA Region 6 Ammonia Toxicity concerns that major sanitary dischargers are being limited to 4/8 at the edge of the mixing zone.

<sup>\*\*</sup>This Dissolved Oxygen limit is the lowest allowable average of daily discharges over a calendar month. When monitoring is conducted, the Dissolved Oxygen shall be analyzed immediately, as per 40 CFR 136.3.

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# **Priority Pollutants**

Effluent Characteristics	Monthly Avg. (lbs./day)	Daily Max (lbs./day)	Basis
Total Lead	Report	Report	Water Quality Based Limit

The above draft priority pollutants limit(s) for Total Lead is based upon the evaluation of one effluent analysis. The permittee may conduct and submit the results of three (3) or more additional effluent analyses to either refute or substantiate the presence of the above toxic pollutants. The additional analyses will be evaluated by this Office to determine if the pollutant is potentially in the effluent and if it potentially exceeds the State's water quality standards.

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# Final Effluent Limits:

### **OUTFALL 001**

Final limits shall become effective three years after the effective date of the permit and lasting through the expiration date of the permit.

Effluent Characteristic	Monthly Avg. (lbs./day)	Monthly Avg.	Weekly Avg.	Basis
CBOD <sub>3</sub>				
May – Dec.	152	7 mg/l	10 mg/l	Limits are set in accordance with the 1987 Vermilion River Watershed TMDL for Dissolved
Jan. – April	304	14 mg/l	21 mg/l	Oxygen.
TSS		· <u></u>		
May Dec.	325	15 mg/l	23 mg/l	Since there is no numeric water quality criterion for TSS, and in accordance with the current
Jan. – April	434	20 mg/l	30 mg/l	Water Quality Management Plan, the TSS effluent
				limitations shall be based on a case-by-case evaluation of the treatment technology being utilized at a facility. Therefore, a Technology Based Limit has been established through Best Professional Judgement for the type of treatment technology utilized at this facility.
Ammonia-Nitrogen				
May - Dec.	65	3 mg/l	7 mg/l	Limits are set in accordance with the 1987 Vermilion River
Jan. – April	87	4 mg/l	8 mg/l	Watershed TMDL for Dissolved Oxygen.
Dissolved Oxygen		5 mg/l	N/A	Limits are set in accordance with the 1987 Vermilion River Watershed TMDL for Dissolved Oxygen and per EPA Region 6 Ammonia Toxicity concerns that major sanitary dischargers are being limited to 4/8 at the edge of the mixing zone.

<sup>\*\*</sup>This Dissolved Oxygen limit is the lowest allowable average of daily discharges over a calendar month. When monitoring is conducted, the Dissolved Oxygen shall be analyzed immediately, as per 40 CFR 136.3.

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#### **Priority Pollutants**

Effluent Characteristics	Monthly Avg. (lbs./day)	Daily Max (lbs./day)	Basis
Total Lead	0.18	0.43	Water Quality Based Limit

The above draft priority pollutants limit(s) for Total Lead is based upon the evaluation of one effluent analysis. The permittee may conduct and submit the results of three (3) or more additional effluent analyses to either refute or substantiate the presence of the above toxic pollutants. The additional analyses will be evaluated by this Office to determine if the pollutant is potentially in the effluent and if it potentially exceeds the State's water quality standards.

#### Other Effluent Limitations:

#### 1) Fecal Coliform

The discharge from this facility is into a water body which has a designated use of Primary Contact Recreation. According to LAC 33:1X.1113.C.5., the fecal coliform standards for this water body are 200/100 ml and 400/100 ml. Therefore, the limits of 200/100 ml (Monthly Average) and 400/100 ml (Weekly Average) are proposed as Fecal Coliform limits in the permit. These limits are being proposed through Best Professional Judgement in order to ensure that the water body standards are not exceeded, and due to the fact that existing facilities have demonstrated an ability to comply with these limitations using present available technology.

# 2) pH

According to LAC 33:1X.3705.A.1., POTW's must treat to at least secondary levels. Therefore, in accordance with LAC 33:1X.5905.C., the pH shall not be less than 6.0 standard units nor greater than 9.0 standard units at any time.

#### 3) Solids and Foam

There shall be no discharge of floating solids or visible foam in other than trace amounts in accordance with LAC 33:IX.1113.B.7.

# 4) Toxicity Characteristics

In accordance with EPA's Region 6 Post-Third Round Toxics Strategy, permits issued to treatment works treating domestic wastewater with a flow (design or expected) greater than or equal to 1 MGD shall require biomonitoring at some frequency for the life of the permit or where available data show reasonable potential to cause lethality, the permit shall require a whole effluent toxicity (WET) limit (Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards, April 16, 2008 VERSION 6).

Whole effluent biomonitoring is the most direct measure of potential toxicity which incorporates the effects of synergism of the effluent components and receiving stream water quality

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characteristics. Biomonitoring of the effluent is, therefore, required as a condition of this permit to assess potential toxicity. LAC 33:1X.1121.B.3. provides for the use of biomonitoring to monitor the effluent for protection of State waters. The biomonitoring procedures stipulated as a condition of this permit are as follows:

The permittee shall submit the results of any biomonitoring testings performed in accordance with the LPDES Permit No. LA0039748, Biomonitoring Section for the organisms indicated below.

TOXICITY TESTS

**FREQUENCY** 

Chronic static renewal 7-day definitive test using Ceriodaphnia dubia

once/quarter1

Chronic static renewal 7-day definitive test using fathead minnow (Pimephales promelas)

once/quarter1

This facility will have a three year compliance schedule to meet toxicity testing requirements implemented into the permit renewal. The biomonitoring frequency shall be quarterly for the life of the permit.

Dilution Series - The permit requires five (5) dilutions in addition to the control (0% effluent) to be used in the toxicity tests. These additional concentrations shall be 31%, 41%, 54%, 73%, and 98%. The biomonitoring critical dilution and WET limit is defined as 98% effluent. The critical dilution is calculated in Appendix B-1 of this fact sheet. Results of all dilutions shall be documented in a full report according to the test method publication mentioned in the Biomonitoring Section under Whole Effluent Toxicity. This full report shall be submitted to the Office of Environmental Compliance as contained in the Reporting Paragraph located in the Biomonitoring Section of the permit.

This facility has experienced several lethal and sub-lethal biomonitoring failures during the previous permit cycle. A reasonable potential analysis also shows that reasonable potential for future lethal and sub-lethal toxicity exists for the City of Abbeville/Abbeville WWTF. LDEQ does not recommend a Whole Effluent Toxicity (WET) Limit be implemented immediately upon permit reissuance. Rather, LDEQ recommends that a three year compliance schedule be incorporated into LA0039748. The purpose of this compliance schedule is to attain compliance with the WET limit. After this three year period expires, the WET limit stated in Part 1 of LA0039748 shall become effective.

The permit may be reopened to require effluent limits, additional testing, and/or other appropriate actions to address toxicity if biomonitoring data show actual or potential ambient toxicity to be the result of the permittee's discharge to the receiving stream or water body. Modification or revocation of the permit is subject to the provisions of LAC 33:1X.2903. Accelerated or intensified toxicity testing may be required in accordance with Section 308 of the Clean Water Act.

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# X. PREVIOUS PERMITS:

LPDES Permit No. LA0039748: Issued: September 1, 2004

Expired: August 31, 2009

Effluent Characteristic	Discharge Lim	itations	Monitoring Req	oring Requirements		
	Monthly Avg.	Weekly Avg.	Measurement	Sample		
		· -	Frequency	Туре		
Flow	Report	Report	Continuous	Recorder		
CBOD,						
May - December	7 mg/l	10 mg/1	l/week	6-Hr.Comp		
January – April	14 mg/l	21 mg/l	1/week	6-Hr.Comp		
TSS		-		•		
May - December	15 mg/l	23 mg/l	1/week	6-Hr.Comp		
January – April	20 mg/l	30 mg/l	1/week	6-Hr.Comp		
Ammonia-Nitrogen	_	•		•		
May - December	3 mg/l	7 mg/l	1/week	6-Hr.Comp		
January – April	4 mg/l	8 mg/l	1/week	6-Hr.Comp		
Dissolved Oxygen	5 mg/l	•••	1/week	Grab		
Fecal Coliform Colonies	200	400	1/week	Grab		
pH (Standard Units)	•••	***	1/week	Grab		
	Monthly Avg.	Weekly Avg.	Measurement	Sample		
			Frequency	Type		
Whole Effluent (Chronic) Toxic 7-Day NOEC	ity Testing					
Ceriodaphnia dubia	Report	Report	1/quarter	24-Hr.Comp		
Pimephales promelas	Report	Report	1/quarter	24-Hr.Comp		

The permit contains pollution prevention language.

#### XI. ENFORCEMENT AND SURVEILLANCE ACTIONS:

### A) Inspections

A review of the files indicates the following inspections were performed during the period beginning June 2007 and ending May 2009 for this facility.

Date - February 6, 2008 Inspector - LDEQ Findings and/or Violations -

- 1. Facility uses a four part boat clarifier extended aeration process with UV lights for disinfection
- 2. DMR's, lab analysis data sheets, flow sheets, lab equipment maintenance, calibration records, and flow device calibration records are available and up to date.
- 3. DMR's are consistent with permit requirements.
- 4. DMR review from April 06 October 07 revealed no excursions.
- 5. Facility is well kept and neat. No spills or leaks were noted at the time of inspection.
- 6. Effluent was clear at the time of inspection.
- 7. All UV lights and aerators are in operation.

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- 8. Facility does exceed design capacity of 2.6 MGD on occasion, although not frequently.
- 9. One of the four clarifiers contained an excessive amount of foam build up.
- 10. Samples are being taken at appropriate times and at the specified location.
- 11. Collection and preservation techniques are being conducted according to permit specifications.
- 12. The flow calculation conducted during the inspection revealed a 12% error.
- 13. Facility uses a belt press for sludge handling and has three permitted sites for land application.

#### C) DMR Review

A review of the discharge monitoring reports for the period beginning June 2007 through May 2009 has revealed no violations:

Effluent Characteristic	Number of Violations
CBOD <sub>5</sub> Avg- (concentration)	0
CBOD, Avg- (concentration)	0
CBOD <sub>5</sub> Max- (mass)	0
TSS Avg - (concentration)	0
TSS Avg- (concentration)	0
TSS Max- (mass)	0
Ammonia Avg- (concentration)	0
Ammonia Avg- (concentration)	0
Ammonia Max- (mass)	0
Dissolved Oxygen	0
Fecal Coliform Avg	0
Fecal Coliform Max	0
рН	0

#### XII. <u>ADDITIONAL INFORMATION:</u>

This permit may be modified, or alternatively, revoked and reissued, to comply with any applicable effluent standard or limitations issued or approved under sections 301(b)(2)(C) and (D); 304(b)(2); and 307(a)(2) of the Clean Water Act or more stringent discharge limitations and/or additional restrictions in the future to maintain the water quality integrity and the designated uses of the receiving water bodies based upon additional water quality studies and/or TMDL's, if the effluent standard, limitations, water quality studies or TMDL's so issued or approved:

- 1. Contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or
- 2. Controls any pollutant not limited in the permit; or
- 3. Require reassessment due to change in 303(d) status of waterbody; or
- 4. Incorporates the results of any total maximum daily load allocation, which may be approved for the receiving water body.

The Louisiana Department of Environmental Quality (LDEQ) reserves the right to modify or revoke and reissue this permit based upon any changes to established TMDLs for this discharge, or to accommodate for pollutant trading provisions in approved TMDL watersheds as necessary to achieve compliance with water quality standards. Therefore, prior to upgrading or expanding this facility, the permittee should

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contact the Department to determine the status of the work being done to establish future effluent limitations and additional permit conditions.

Final effluent loadings (i.e. lbs/day) have been establish based upon the previous permit limits which were based on the 1987 Vermilion River Watershed TMDL for Dissolved Oxygen and using the facility's design capacity flow of 2.6 MGD at that time. The recommendations from the 1999 Review and Assessment of the 1987 Vermilion River Watershed TMDL for Dissolved Oxygen states that this model continues to adequately simulate conditions in the watershed. Under this TMDL, the City of Abbeville received mass limits. They were allowed to use half of the margin of safety originally associated with their system. Their permit limits were therefore set at 7 mg/l CBOD<sub>3</sub>/3 mg/l NH<sub>3</sub>N/5 mg/l DO for April – November and 14 mg/l CBOD<sub>3</sub>/7 mg/l NH<sub>3</sub>N/5 mg/l DO for December – March which changed their allocation to 90% instead of 80% of the original 1987 TMDL.

Effluent loadings are calculated using the following example:

CBOD<sub>5</sub>: 8.34 gal/lb x 2.6 MGD x 7 mg/l = 152 lbs/day

At present, the Monitoring Requirements, Sample Types, and Frequency of Sampling as shown in the permit are standard for facilities of flows between 1.0 and 5.0 MGD.

Effluent Characteristics	Monitoring Requirements				
	Measurement	Sample			
	Frequency	Type			
Flow	Continuous	Recorder			
CBOD,	1/week	6 Hr. Composite			
Total Suspended Solids	1/week	6 Hr. Composite			
Ammonia-Nitrogen	1/week	6 Hr. Composite			
Dissolved Oxygen	1/week	Grab			
Fecal Coliform Bacteria	1/week	Grab			
рН	l/week	Grab			
Biomonitoring					
Ceriodaphnia dubia	1/quarter	24-Hr. Composite			
Pimephales promelas	1/quarter	24-Hr. Composite			
Total Lead	1/quarter	24-Hr. Composite			

#### Pretreatment Requirements

Based upon consultation with LDEQ pretreatment personnel, it is recommended that LDEQ Option 1 Pretreatment Language be included in LPDES Permit LA0039748, due to the lack of either an approved or required pretreatment program.

# Pollution Prevention Requirements

The permittee shall institute or continue programs directed towards pollution prevention. The permittee shall institute or continue programs to improve the operating efficiency and extend the useful life of the facility. The permittee will complete an annual Environmental Audit Report <u>each year</u> for the life of this permit according to the schedule below. The permittee will accomplish this requirement by completing an Environmental Audit Form which has been attached to the permit. All other requirements of the Municipal Wastewater Pollution Prevention Program are contained in Part II of the permit.

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The audit evaluation period is as follows:

Audit Period Begins	Audit Period Ends	Audit Report Completion Date	
Effective Date of Permit	12 Months from Audit Period Beginning Date	3 Months from Audit Period Ending Date	

#### XIII TENTATIVE DETERMINATION:

On the basis of preliminary staff review, the Department of Environmental Quality has made a tentative determination to reissue a permit for the discharge described in this Statement of Basis.

#### XIV REFERENCES:

Louisiana Water Quality Management Plan / Continuing Planning Process, Vol. 8, "Wasteload Allocations / Total Maximum Daily Loads and Effluent Limitations Policy," Louisiana Department of Environmental Quality, 2009.

Louisiana Water Quality Management Plan / Continuing Planning Process, Vol. 5, "Water Quality Inventory Section 305(b) Report," Louisiana Department of Environmental Quality, 2006.

Louisiana Administrative Code, Title 33 - Environmental Quality, Part IX - Water Quality Regulations, Chapter 11 - "Louisiana Surface Water Quality Standards", Louisiana Department of Environmental Quality, 2009.

Louisiana Administrative Code, Title 33 - Environmental Quality, Part IX - Water Quality Regulations, Subpart 2 - "The LPDES Program", Louisiana Department of Environmental Quality, 2009.

<u>Low-Flow Characteristics of Louisiana Streams</u>, Water Resources Technical Report No. 22, United States Department of the Interior, Geological Survey, 1980.

<u>Index to Surface Water Data in Louisiana</u>, Water Resources Basic Records Report No. 17, United States Department of the Interior, Geological Survey, 1989.

<u>LPDES Permit Application to Discharge Wastewater</u>, City of Abbeville, Abbeville Wastewater Treatment Facility, April 30, 2009.

#### APPENDIX 1, LA0039748, A1 No. 20037

# Documentation and Explanation of Water Quality Screen and Associated Lotus Spreadsheet

Each reference column is marked by a set of parentheses enclosing a number and asterisk, for example (\*1) or (\*19). These columns represent inputs, existing data sets, calculation points, and results for determining Water Quality Based Limits for an effluent of concern. The following represents a summary of information used in calculating the water quality screen:

### Receiving Water Characteristics:

Receiving Water: city drainage canal; thence into Youngs North Coulee; thence into the Vermilion River

Critical Flow, Qrc (cfs): 0.1

Harmonic Mean Flow, Qth (cfs): 1.0

Segment No.: 060802

Receiving Stream Hardness (mg/L): 110

Receiving Stream TSS (mg/L): 2

MZ Stream Factor, Fs: 1 Plume distance, Pf: N/A

#### Effluent Characteristics:

Company: City of Abbeville Facility flow, Qe (MGD): 2.6 Effluent Hardness: N/A Effluent TSS: N/A Pipe/canal width, Pw: N/A Permit Number: LA0039748

#### Variable Definition:

Orc. critical flow of receiving stream, cfs

Orh, harmonic mean flow of the receiving stream, cfs

Pf = Allowable plume distance in feet, specified in LAC 33.1X.1115.D

Pw = Pipe width or canal width in feet

Qe, total facility flow, MGD

Fs, stream factor from LAC.IX.33.11 (1 for harmonic mean flow)

Cu, ambient concentration, ug/L

Cr, numerical criteria from LAC.IX.1113, Table 1

WLA, wasteload allocation

LTA, long term average calculations

WQBL, effluent water quality based limit

ZID, Zone of Initial Dilution in % effluent

MZ, Mixing Zone in % effluent

Formulas used in aquatic life water quality screen (dilution type WLA): Streams:

Dilution Factor = 
$$\frac{Qe}{(Qrc \times 0.6463 \times Fs + Qe)}$$

WLA a,c,h = 
$$\frac{Cr}{Dilution Factor}$$
 -  $\frac{(Fs \times Qrc \times 0.6463 \times Cu)}{Qe}$ 

Static water bodies (in the absence of a site specific dilution):

Discharge from a pipe: Discharge from a canal:

Critical Critical

Dilution =  $\underbrace{(2.8) \text{ Pw } \pi^{1/2}}_{\text{Pf}}$  Dilution =  $\underbrace{(2.38)(\text{Pw}^{1/2})}_{(\text{Pf})^{1/2}}$ 

WLA = (Cr-Cu) Pf(2.8)  $Pw \pi^{1/2}$  WLA =  $(Cr-Cu) Pf^{1/2}$ 2.38  $Pw^{1/2}$ 

Formulas used in human health water quality screen, human health non-carcinogens (dilution type WLA):

Streams:

Dilution Factor = 
$$\frac{Qe}{(Qrc \times 0.6463 + Qe)}$$

WLA a,c,h = 
$$\underline{Cr}$$
 -  $\underline{(Qrc \times 0.6463 \times Cu)}$   
Dilution Factor  $Qe$ 

Formulas used in human health water quality screen, human health carcinogens (dilution type WLA):

Dilution Factor = 
$$\frac{Qe}{(Qrh \times 0.6463 + Qe)}$$

WLA a,c,h = 
$$Cr$$
 -  $Qrh \times 0.6463 \times Cu$   
Dilution Factor  $Qe$ 

Static water bodies in the absence of a site specific dilution (human health carcinogens and human health non-carcinogens):

Discharge from a pipe: Discharge from a canal:

Critical Critical

Dilution =  $(2.8) \text{ Pw } \pi^{1/2}$  Dilution =  $(2.38)(\text{Pw}^{1/2})$   $(\text{Pf})^{1/2}$ 

WLA = 
$$\frac{(Cr-Cu) Pf^*}{(2.8) Pw \pi^{1/2}}$$
 WLA =  $\frac{(Cr-Cu) Pf^{1/2}}{2.38 Pw^{1/2}}$ 

\* Pf is set equal to the mixing zone distance specified in LAC 33:1X.1115 for the static water body type, i.e., lake, estuary, Gulf of Mexico, etc.

If a site specific dilution is used, WLA are calculated by subtracting Cu from Cr and dividing by the site specific dilution for human health and aquatic life criteria.

$$WLA = \underbrace{(Cr-Cu)}_{\text{site specific dilution}}$$

Longterm Average Calculations:

LTAa = WLAa X 0.32 LTAc = WLAc X 0.53 LTAh = WLAh

**WQBL Calculations:** 

Select most limiting LTA to calculate daily max and monthly avg WQBL

If aquatic life LTA is more limiting:
Daily Maximum = Min(LTAa, LTAc) X 3.11
Monthly Average = Min(LTAc, LTAc) X 1.31

If human health LTA is more limiting: Daily Maximum = LTAh X 2.38 Monthly Average = LTAh

Mass Balance Formulas:

mass (lbs/day): (ug/L) X 1/1000 X (flow, MGD) X 8.34 = lbs/day

concentration(ug/L): <u>lbs/day</u> = ug/L (flow, MGD) X 8.34 X 1/1000

The following is an explanation of the references in the spreadsheet.

- (\*1) Parameter being screened.
- (\*2) Instream concentration for the parameter being screened in ug/L. In the absence of accurate supporting data, the instream concentration is assumed to be zero (0).
- (\*3) Monthly average effluent or technolgy value in concentration units of ug/L or mass units of lbs/day. Units determined on a case-by-case basis as appropriate to the particular situation.
- (\*4) Daily maximum technology value in concentration units of ug/L or mass units of lbs/day. Units determined on a case-by-case basis as appropriate to the particular situation.
- (\*5) Minimum analytical Quantification Levels (MQL's). Established in a letter dated January 27, 1994 from Wren Stenger of EPA Region 6 to Kilren Vidrine of LDEQ and from the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards". The applicant must test for the parameter at a level at least as sensitive as the specified MQL. If this is not done, the MQL becomes the application value for screening purposes if the pollutant is suspected to be present on-site and/or in the waste stream. Units are in ug/l or lbs/day depending on the units of the effluent data.
- (\*6) States whether effluent data is based on 95th percentile estimation. A "1" indicates that a 95th percentile approximation is being used, a "0" indicates that no 95th percentile approximation is being used.
- (\*7) 95th percentile approximation multiplier (2.13). The constant, 2.13, was established in memorandum of understanding dated October 8, 1991 from Jack Ferguson of Region 6 to Jesse Chang of LDEQ and included in the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards". This value is screened against effluent Water Quality Based Limits established in columns (\*18) · (\*21). Units are in ug/l or lbs/day depending on the units of the measured effluent data.
- (\*8) LAC 33.1X.1113.C.6, Table 1, Numerical Criteria for Specific Toxic Substances, freshwater (FW) or marine water (MW) (whichever is applicable) aquatic life protection, acute criteria. Units are specified. Some metals are hardness dependent. The hardness of the receiving stream shall generally be used, however a flow weighted hardness may be determined in site-specific situations. Dissolved metals are converted to Total metals using partition coefficients in accordance with the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards". Similar to hardness, the TSS of

Metal

Zinc

the receiving stream shall generally be used, however, a flow weighted TSS may be determined in sitespecific situations.

Hardness Dependent Criteria:

e(1.1280[In(hardness)] - 1.6774) Cadmium e(0.8190[ln(hardness)] + 3.6880) Chromium III e(0.9422[ln(hardness)] - 1.3884) Copper <sub>சு</sub>(1.2730[In(hardness)] - 1.4600) Lead e(0.8460[ln(hardness)] + 3,3612) Nickel e(0.8473[in(hardness)] + 0.8604)

Formula

Dissolved to Total Metal Multipliers for Freshwater Streams (TSS dependent):

<u>Metal</u> Multiplier

1 + 0.48 X TSS-0 73 X TSS Arsenic 1 + 4.00 X TSS<sup>-1.13</sup> X TSS Cadmium 1 + 3.36 X TSS<sup>-0 93</sup> X TSS Chromium III 1 + 1.04 X TSS<sup>-0.74</sup> X TSS Copper 1 + 2.80 X TSS-0.80 X TSS Lead 1 + 2.90 X TSS<sup>-1.14</sup> X TSS Mercury 1 + 0.49 X TSS-0.57 X TSS Nickel 1 + 1.25 X TSS<sup>-0.70</sup> X TSS Zinc

Dissolved to Total Metal Multipliers for Marine Environments (TSS dependent):

<u>Metal</u> Multiplier

1 + (104.86 X TSS-0.72 X TSS) X 10-6 Copper 1 + (10<sup>6</sup> 06 X TSS-0.85 X TSS) X 10<sup>-6</sup> Lead  $1 + (10^{5.36} \text{ X TSS}^{-0.52} \text{ X TSS}) \text{ X } 10^{-6}$ Zinc

If a metal does not have multiplier listed above, then the dissolved to total metal multiplier shall be 1.

(\*9)LAC 33.IX.1113.C.6, Table 1, Numerical Criteria for Specific Toxic Substances, freshwater (FW) or marine water (MW) (whichever is applicable) aquatic life protection, chronic criteria. Units are specified. Some metals are hardness dependent. The hardness of the receiving stream shall generally be used, however a flow weighted hardness may be determined in site-specific situations. Dissolved metals are converted to Total metals using partition coefficients in accordance with the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards". Similar to hardness, the TSS of the receiving stream shall generally be used, however, a flow weighted TSS may be determined in sitespecific situations.

Hardness dependent criteria:

Metal **Formula** 

e (0.7852[In(hardness)] - 3.4900) Cadmium e<sup>(0 8473[In(hardness)] + 0.7614)</sup> Chromium III e<sup>(0.8545[In(hardness)] - 1,3860)</sup> Copper e(1.2730[In(hardness)] - 4.7050) Lead e(0.8460[in(hardness)] + 1.1645) Nickel e (0 8473[ln(hardness)] + 0 7614) Zinc

Dissolved to total metal multiplier formulas are the same as (\*8), acute numerical criteria for aquatic life protection.

- (\*10) LAC 33.IX.1113.C.6, Table 1, Numerical Criteria for Specific Toxic Substances, human health protection, drinking water supply (HHDW), non-drinking water supply criteria (HHNDW), or human health non-primary contact recreation (HHNPCR) (whichever is applicable). A DEQ and EPA approved Use Attainability Analysis is required before HHNPCR is used, e.g., Monte Sano Bayou. Units are specified.
- (\*11) C if screened and carcinogenic. If a parameter is being screened and is carcinogenic a "C" will appear in this column.
- (\*12) Wasteload Allocation for acute aquatic criteria (WLAa). Dilution type WLAa is calculated in accordance with the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards". Negative values indicate that the receiving water is not meeting the acute aquatic numerical criteria for that parameter. Units are in ug/L. Dilution WLAa formulas for streams:

WLAa = (Cr/Dilution Factor) - (Fs x Qrc x 0.6463 x Cu)

Qe

Dilution WLAa formulas for static water bodies:

WLAa = (Cr-Cu)/Dilution Factor)

Cr represents aquatic acute numerical criteria from column (\*8).

If Cu data is unavailable or inadequate, assume Cu=0.

If water quality standards are being applied at end-of-pipe, such as in the case of certain TMDL's, then a blank shall appear in this column.

(\*13) Wasteload Allocation for chronic aquatic criteria (WLAc). Dilution type WLAc is calculated in accordance with the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards". Negative values indicate that the receiving water is not meeting the chronic aquatic numerical criteria for that parameter. Units are in ug/L. Dilution WLAc formula:

WLAc =  $(Cr/Dilution Factor) - (Fs \times Qrc \times 0.6463 \times Cu)$ 

Qe.

Dilution WLAc formulas for static water bodies:

WLAc = (Cr-Cu)/Dilution Factor)

Cr represents aquatic chronic numerical criteria from column (\*9).

If Cu data is unavailable or inadequate, assume Cu=0.

If water quality standards are being applied at end-of-pipe, such as in the case of certain TMDL's, then a blank shall appear in this column.

(\*14) Wasteload Allocation for human health criteria (WLAh). Dilution type WLAh is calculated in accordance with the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards". Negative values indicate that the receiving water is not meeting the human health numerical criteria for that parameter. Units are in ug/L. Dilution WLAh formula:

WLAh =  $(Cr/Dilution Factor) - (Fs \times Qrc, Qrh \times 0.6463 \times Cu)$ 

Oe

Dilution WLAh formulas for static water bodies:

WLAh = (Cr-Cu)/Dilution Factor)

Cr represents human health numerical criteria from column (\*10).

If Cu data is unavailable or inadequate, assume Cu=0.

If water quality standards are being applied at end-of-pipe, such as in the case of certain TMDL's, then a blank shall appear in this column.

(\*15) Long Term Average for aquatic numerical criteria (LTAa). WLAa numbers are multiplied by a multiplier specified in the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards" which is 0.32. WLAa X 0.32 = LTAa.

If water quality standards are being applied at end-of-pipe, such as in the case of certain TMDL's, then a blank shall appear in this column.

- (\*16) Long Term Average for chronic numerical criteria (LTAc). WLAc numbers are multiplied by a multiplier specified in the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards" which is 0.53. WLAc X 0.53 = LTAc.

  If water quality standards are being applied at end-of-pipe, such as in the case of certain TMDL's, then a blank shall appear in this column.
- (\*17) Long Term Average for human health numerical criteria (LTAh). WLAh numbers are multiplied by a multiplier specified in the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards" which is 1. WLAc X 1 = LTAh.

  If water quality standards are being applied at end-of-pipe, such as in the case of certain TMDL's, then a blank shall appear in this column.
- (\*18) Limiting Acute, Chronic or Human Health LTA's. The most limiting LTA is placed in this column. Units are consistent with the WLA calculation. If standards are being applied at end-of-pipe, such as in the case of certain TMDL's, then the type of limit, Aquatic or Human Health (HH), is indicated.
- (\*19) End of pipe Water Quality Based Limit (WQBL) monthly average in terms of concentration, ug/L. If aquatic life criteria was the most limiting LTA then the limiting LTA is multiplied by 1.31 to determine the average WQBL (LTA<sub>limiting aquatic</sub> X 1.31 = WQBL<sub>monthly average</sub>). If human health criteria was the most limiting criteria then LTAh = WQBL<sub>monthly average</sub>. If water quality standards are being applied at end-of-pipe, such as in the case of certain TMDL's, then either the human health criteria or the chronic aquatic life criteria shall appear in this column depending on which is more limiting.
- (\*20) End of pipe Water Quality Based Limit (WQBL) daily maxium in terms of concentration, ug/L. If aquatic life criteria was the most limiting LTA then the limiting LTA is multiplied by 3.11 to determine the daily maximum WQBL (LTA<sub>limiting aquatic</sub> X 3.11 = WQBL<sub>daily max</sub>). If human health criteria was the most limiting criteria then LTAh is multiplied by 2.38 to determine the daily maximum WQBL (LTA<sub>limiting aquatic</sub> X 2.38 = WQBL<sub>daily max</sub>). If water quality standards are being applied at end-of-pipe, such as in the case of certain TMDL's, then either the human health criteria or the acute aquatic life criteria shall appear in this column depending on which is more limiting.
- (\*21) End of pipe Water Quality Based Limit (WQBL) monthly average in terms of mass, lbs/day. The mass limit is determined by using the mass balance equations above. Monthly average WQBL, ug/l/1000 X facility flow, MGD X 8.34 = monthly average WQBL, lbs/day.
- (\*22) End of pipe Water Quality Based Limit (WQBL) monthly average in terms of mass, lbs/day. Mass limit is determined by using the mass balance equations above. Daily maximum WQBL, ug/l/1000 X facility flow, MGD X 8.34 = daily maximum WQBL, lbs/day.
- (\*23) Indicates whether the screened effluent value(s) need water quality based limits for the parameter of concern. A "yes" indicates that a water quality based limit is needed in the permit; a "no" indicates the reverse.



wqsmodn.wk4

Date: 03/03

Appendix B-1

LA0039748

Page 1

Developer: Bruce Fielding Time: 08:33 AM

Software: Lotus 4.0 Revision date: 03/11/09

Water Quality Screen for

Input		

Input variables:					
Receiving Water Character	istics:	Dilution:		Toxicity Dilution Series	\$ :
		ZID Fs =	0.1	Biomonitoring dilution:	0.975745
Receiving Water Name=	Youngs Coulee Nort	h		Dilution Series Factor:	0.75
Critical flow (Qr) cfs=	0.1	MZ Fs =	1		
Harm. mean/avg tidal cfs=	1	Critical Qr (MGD) =	0.06463		Percent Effluent
Drinking Water=1 HHNPCR=2		Harm. Mean (MGD) =	0.6463	Dilution No. 1	97.575%
MW=1, $BW=2$ , $0=n$		ZID Dilution =	0.99752	Dilution No. 2	73.1809%
Rec. Water Hardness=	110	MZ Dilution =	0.975745	Dilution No. 3	54.8857%
Rec. Water TSS=	2	HHnc Dilution=	0.975745	Dilution No. 4	41.1643%
Fisch/Specific=1,Stream=0		HHc Dilution=	0.800912	Dilution No. 5	30.8732%
Diffuser Ratio=		ZID Upstream =	0.002486		
		MZ Upstream =	0.024858	Partition Coefficients; Di	ssolved>Total
Effluent Characteristics:		MZhhnc Upstream=	0.024858		
Permittee=				METALS	FW
Permit Number=	LA0039748			Total Arsenic 1.5	78788
Facility flow (Qef),MGD=	2.6	MZhhc Upstream=	0.248577	Total Cadmium 4.6	55326
		ZID Hardness=		Chromium III 4.5	27048
Outfall Number =	001	MZ Hardness=		Chromium VI	1
Eff. data, 2=lbs/day		ZID TSS=		Total Copper 2.2	45378
MQL, 2=lbs/day	2	MZ TSS=		Total Lead 4.2	16355
Effluent Hardness=	N/A	Multipliers:		Total Mercury 3.6	31806
Effluent TSS=	N/A	WLAa> LTAa	0.32	Total Nickel 1.66	60144
WQBL ind. 0=y, 1=n		WLAC> LTAC	0.53	Total Zinc 2.5	38931
Acute/Chr. ratio 0=n, 1=y	0	LTA a,c>WQBL avg	1.31		
Aquatic,acute only1=y,0=n		LTA a,c>WQBL max	3.11	Aquatic Life, Dissolved	
		LTA h> WQBL max	2.38	Metal Criteria, ug/L	
Page Numbering/Labeling		WQBL-limit/report	2.13	METALS A	CUTE CHRONIC
Appendix	Appendix B-1	WLA Fraction	1	Arsenic	339.8 150
Page Numbers 1=y, 0=n	1	WQBL Fraction	1	Cadmium 35.2	26463 1.106289
Input Page # 1=y, 0=n	1			Chromium III 593	.2882 192.4566
		Conversions:		Chromium VI	5.712 10.582
Fischer/Site Specific inpu	its:	ug/L>lbs/day Qef	0.021684	Copper 20.3	15738 13.32629
Pipe=1, Canal=2, Specific=3		ug/L>lbs/day Qeo	0	Lead 71.	63206 2.791399
Pipe width, feet		ug/L>lbs/day Qr	0.000834	Mercury	1.734 0.012
ZID plume dist., feet		lbs/day>ug/L Qeo	46.11695	Nickel 153	4.261 170.392
MZ plume dist., feet		lbs/day>ug/L Qef	46.11695	Zinc 124	.0732 113.2976
HHnc plume dist., feet		diss>tot 1=y0=n	1		
HHc plume dist., feet		Cu diss->tot1=y0=n	1	Site Specific Multiplier	values:
		cfs>MGD	0.6463	CV =	
Fischer/site specific dilu	itions:			N =	
ilution =	***	Receiving Stream:		WLAa> LTAa	
F/specific MZ Dilution =	•••	Default Hardness=	25	WLAC> LTAC	***
F/specific HHnc Dilution=		Default TSS=	10	LTA a,c>WQBL avg	
F/specific HHc Dilution=		99 Crit., 1=y, 0=n	1	LTA a,c>WQBL max	
		Old MQL=1, New=0	1	LTA h> WOBL max	



Appendix B-1 Page 2

(*1)	(*2)	(*3)	(*4)	(*5)	(*6)	(+7)	(*8)	(*9)	(*10)	(*11)	
Toxic		Effluent			Effluent			rical Crit		нн	
Parameters	Instream	/Tech	/Tech	100	1=No 95%	estimate	Acute	Chronic		Carcinogen	
Parameters	Conc.	(Avg)	(Max)		0=95 %	Non-Tech	FW	FW		Indicator	
	ug/L	ug/L	ug/L	lbs/day	0-30	ug/L	ug/L	ug/L	ug/L	"C"	
NONCONVENTIONAL	49,2	39,2	49,2	122,007		-5,-	-5,-	-5,-	-5		
Total Phenols (4AAP)				0.10842			700	350	50		
3-Chlorophenol				0.21684							
4-Chlorophenol				0.21684			383	192			
2,3-Dichlorophenol				0.21684							
2,5-Dichlorophenol				0.21684							
2,6-Dichlorophenol				0.21684							
3,4-Dichlorophenol				0.21684							
2,4-Dichlorophenocy-											
acetic acid (2,4-D)											
2-(2,4,5-Trichlorophen-											
oxy) propionic acid											
(2,4,5-TP, Silvex)											
METALS AND CYANIDE											
Total Arsenic				0.21684			536.4721	236.8182			
Total Cadmium				0.021684			164.1684	5.150138			
Chromium III				0.21684			2685.844	871.2602			
Chromium VI				0.21684			15.712	10.582			
Total Copper				0.21684			45.26094	29.92255			
AND THE RESIDENCE AND ADDRESS OF THE PARTY O		Company of the Control of the State of	CORNER DE PROPERTY AND			10.000 March - Arrive M. L. Composite M. A. Composite M.			eto furbiciosa, intraferenda (h. L. Redescopport		
Total Lead		16.7		0.10842	0	35,571	302.0262	11.76953			100
NAME AND ADDRESS OF THE PARTY O		16.7		0.10842	0	35,571		11.76953			1000
Total Lead	:	16.7		0.004337			6.297551	0.043582 282.8754			100
Total Lead  Total Mercury  Total Nickel  Total Zine	:	16.7 34.4		0.004337 0.86736 0.43368		73.272	6.297551 2547.096 315.0131	0.043582 282.8754 287.6548			Military Control
Total Lead Total Mercury Total Nickel	·	16.7 34.4		0.004337			6.297551	0.043582 282.8754	12844		No.
Total Lead  Total Mercury  Total Nickel  Total Zinc  Total Cyanide	:	16.7		0.004337 0.86736 0.43368			6.297551 2547.096 315.0131	0.043582 282.8754 287.6548			No. of the last of
Total Lead  Total Mercury  Total Nickel  Total Zine  Total Cyanide		16.7 34.4		0.004337 0.86736 0.43368 0.43368			6.297551 2547.096 315.0131	0.043582 282.8754 287.6548	12844		No.
Total Lead  Total Mercury  Total Nickel  Total Zinc  Total Cyanide		16.7 34.4		0.004337 0.86736 0.43368			6.297551 2547.096 315.0131	0.043582 282.8754 287.6548		С	THE STREET
Total Lead Total Mercury Total Nickel Total Zinc Total Cyanide DIOXIN 2,3,7,8 TCDD; dioxin	:	16.7 34.4		0.004337 0.86736 0.43368 0.43368			6.297551 2547.096 315.0131	0.043582 282.8754 287.6548	12844	C	No.
Total Lead Total Mercury Total Nickel Total Zinc Total Cyanide  DIOXIN 2,3,7,8 TCDD; dioxin  VOLATILE COMPOUNDS		16.7		0.004337 0.86736 0.43368 0.43368			6.297551 2547.096 315.0131 45.9	0.043582 282.8754 287.6548 5.4	12844 7.2E-07		TO THE PARTY OF TH
Total Lead  Total Mercury  Total Nickel  Total Zine  Total Cyanide  DIOXIN 2,3,7,8 TCDD; dioxin  VOLATILE COMPOUNDS Benzene		16.7		0.004337 0.86736 0.43368 0.43368 2.2E-07			6.297551 2547.096 315.0131 45.9	0.043582 282.8754 287.6548 5.4	12844 7.2E-07	С	Section Section
Total Lead  Total Mercury  Total Nickel  Total Zinc  Total Cyanide  DIOXIN 2,3,7,8 TCDD; dioxin  VOLATILE COMPOUNDS  Benzene  Bromoform		16.7		0.004337 0.86736 0.43368 0.43368 2.2E-07			6.297551 2547.096 315.0131 45.9	0.043582 282.8754 287.6548 5.4	12844 7.2E-07 12.5 34.7	c c	No.
Total Lead Total Mercury Total Nickel Total Zinc Total Cyanide  DIOXIN 2,3,7,8 TCDD; dioxin  VOLATILE COMPOUNDS Benzene Bromoform Bromodichloromethane		16.7		0.004337 0.86736 0.43368 0.43368 2.2E-07 0.21684 0.21684			6.297551 2547.096 315.0131 45.9	0.043582 282.8754 287.6548 5.4	12844 7.2E-07 12.5 34.7 3.3	c c	No.
Total Lead Total Mercury Total Nickel Total Zinc Total Cyanide  DIOXIN 2,3,7,8 TCDD; dioxin  VOLATILE COMPOUNDS Benzene Bromoform Bromodichloromethane Carbon Tetrachloride		16.7		0.004337 0.86736 0.43368 0.43368 2.2E-07 0.21684 0.21684 0.21684			6.297551 2547.096 315.0131 45.9 2249 2930	0.043582 282.8754 287.6548 5.4 1125 1465	12844 7.2E-07 12.5 34.7 3.3 1.2	C C C	No.
Total Lead Total Mercury Total Nickel Total Zinc Total Cyanide  DIOXIN 2,3,7,8 TCDD; dioxin  VOLATILE COMPOUNDS Benzene Bromoform Bromodichloromethane Carbon Tetrachloride Chloroform		34.4		0.004337 0.86736 0.43368 0.43368 2.2E-07 0.21684 0.21684 0.21684 0.21684			6.297551 2547.096 315.0131 45.9	0.043582 282.8754 287.6548 5.4	12844 7.2E-07 12.5 34.7 3.3 1.2 70	C C C	No.
Total Lead Total Mercury Total Nickel Total Zinc Total Cyanide  DIOXIN 2,3,7,8 TCDD; dioxin  VOLATILE COMPOUNDS Benzene Bromoform Bromodichloromethane Carbon Tetrachloride Chloroform Dibromochloromethane		34.4		0.004337 0.86736 0.43368 0.43368 0.43368 2.2E-07 0.21684 0.21684 0.21684 0.21684			6.297551 2547.096 315.0131 45.9 2249 2930 2730 2890	0.043582 282.8754 287.6548 5.4 1125 1465	12844 7.2E-07 12.5 34.7 3.3 1.2 70 5.08		OS O
Total Lead Total Mercury Total Nickel Total Zinc Total Cyanide  DIOXIN 2,3,7,8 TCDD; dioxin  VOLATILE COMPOUNDS Benzene Bromoform Bromodichloromethane Carbon Tetrachloride Chloroform Dibromochloromethane 1,2-Dichloroethane		34.4		0.004337 0.86736 0.43368 0.43368 2.2E-07 0.21684 0.21684 0.21684 0.21684 0.21684			6.297551 2547.096 315.0131 45.9 2249 2930	0.043582 282.8754 287.6548 5.4 1125 1465 1365 1445	12844 7.2E-07 12.5 34.7 3.3 1.2 70 5.08 6.8		SECTION SECTIO
Total Lead Total Mercury Total Nickel Total Zinc Total Cyanide  DIOXIN 2,3,7,8 TCDD; dioxin  VOLATILE COMPOUNDS Benzene Bromoform Bromodichloromethane Carbon Tetrachloride Chloroform Dibromochloromethane 1,2-Dichloroethane 1,1-Dichloroethylene		34.4		0.004337 0.86736 0.43368 0.43368 0.43368 2.2E-07 0.21684 0.21684 0.21684 0.21684 0.21684 0.21684			6.297551 2547.096 315.0131 45.9 2249 2930 2730 2890	0.043582 282.8754 287.6548 5.4 1125 1465	12844 7.2E-07 12.5 34.7 3.3 1.2 70 5.08 6.8 0.58		SECO MINISTER
Total Lead Total Mercury Total Nickel Total Zinc Total Cyanide  DIOXIN 2,3,7,8 TCDD; dioxin  VOLATILE COMPOUNDS Benzene Bromoform Bromodichloromethane Carbon Tetrachloride Chloroform Dibromochloromethane 1,2-Dichloroethane		16.7		0.004337 0.86736 0.43368 0.43368 2.2E-07 0.21684 0.21684 0.21684 0.21684 0.21684			6.297551 2547.096 315.0131 45.9 2249 2930 2730 2890 11800 1160	0.043582 282.8754 287.6548 5.4 1125 1465 1365 1445 5900 580	12844 7.2E-07 12.5 34.7 3.3 1.2 70 5.08 6.8		SEC SECUL
Total Lead Total Mercury Total Nickel Total Zinc Total Cyanide  DIOXIN 2,3,7,8 TCDD; dioxin  VOLATILE COMPOUNDS Benzene Bromoform Bromodichloromethane Carbon Tetrachloride Chloroform Dibromochloromethane 1,2-Dichloroethane 1,1-Dichloroethylene 1,3-Dichloropropylene		34.4		0.004337 0.86736 0.43368 0.43368 0.43368 2.2E-07 0.21684 0.21684 0.21684 0.21684 0.21684 0.21684 0.21684 0.21684			6.297551 2547.096 315.0131 45.9 2249 2930 2730 2890 11800 1160 606	0.043582 282.8754 287.6548 5.4 1125 1465 1365 1445 5900 580 303	12844 7.2E-07 12.5 34.7 3.3 1.2 70 5.08 6.8 0.58 162.79		SIGN STATE OF THE
Total Lead Total Mercury Total Nickel Total Zinc Total Cyanide  DIOXIN 2,3,7,8 TCDD; dioxin  VOLATILE COMPOUNDS Benzene Bromoform Bromodichloromethane Carbon Tetrachloride Chloroform Dibromochloromethane 1,2-Dichloroethane 1,1-Dichloroethylene 1,3-Dichloropropylene Ethylbenzene		34.4		0.004337 0.86736 0.43368 0.43368 0.43368 2.2E-07 0.21684 0.21684 0.21684 0.21684 0.21684 0.21684 0.21684 0.21684			6.297551 2547.096 315.0131 45.9 2249 2930 2730 2890 11800 1160 606 3200	0.043582 282.8754 287.6548 5.4 1125 1465 1345 5900 580 303 1600	12844 7.2E-07 12.5 34.7 3.3 1.2 70 5.08 6.8 0.58 162.79		
Total Lead Total Mercury Total Nickel Total Zinc Total Cyanide  DIOXIN 2,3,7,8 TCDD; dioxin  VOLATILE COMPOUNDS Benzene Bromoform Bromodichloromethane Carbon Tetrachloride Chloroform Dibromochloromethane 1,2-Dichloroethane 1,1-Dichloroethylene 1,3-Dichloropropylene Ethylbenzene Methyl Chloride		16.7		0.004337 0.86736 0.43368 0.43368 2.2E-07 0.21684 0.21684 0.21684 0.21684 0.21684 0.21684 0.21684 0.21684 1.0842			6.297551 2547.096 315.0131 45.9 2249 2930 2730 2890 11800 1160 606 3200 55000	0.043582 282.8754 287.6548 5.4 1125 1465 1365 1445 5900 580 303 1600 27500	12844 7.2E-07 12.5 34.7 3.3 1.2 70 5.08 6.8 0.58 162.79 8100		SEC MINE
Total Lead Total Mercury Total Nickel Total Zinc Total Cyanide  DIOXIN 2,3,7,8 TCDD; dioxin  VOLATILE COMPOUNDS Benzene Bromoform Bromodichloromethane Carbon Tetrachloride Chloroform Dibromochloromethane 1,2-Dichloroethane 1,1-Dichloroethylene 1,3-Dichloropropylene Ethylbenzene Methyl Chloride Methylene Chloride		34.4		0.004337 0.86736 0.43368 0.43368 0.43368 2.2E-07 0.21684 0.21684 0.21684 0.21684 0.21684 0.21684 0.21684 0.21684			6.297551 2547.096 315.0131 45.9 2249 2930 2730 2890 11800 1160 606 3200 55000	0.043582 282.8754 287.6548 5.4 1125 1465 1365 1445 5900 580 303 1600 27500	12844 7.2E-07 12.5 34.7 3.3 1.2 70 5.08 6.8 0.58 162.79 8100		



Appendix B-1 Page 3

(*1)	(*12)	(*13)	(*14)	(*15)	(*16)	(*17)	(*18)	(*19)	(*20)	(*21)	(*22)	(*23)
Toxic	WLAa	WLAc	WLAh	LTAa	LTAC	LTAh	Limiting	WQBL	WQBL	WQBL	WQBL	Need
Parameters	Acute	Chronic	HHNDW	Acute	Chronic	HHNDW	A,C,HH	Avg	Max	Avg	Max	WQBL?
								001	001	001	001	
	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	lbs/day	lbs/day	
NONCONVENTIONAL												
Total Phenols (4AAP)	701.74004	358.70019	51.242885	224.55681	190.1111	51.242885	51.242885	51.242885	121.95807	1.1111507	2.6445387	no
3-Chlorophenol												no
4-Chlorophenol	383.95205	196.77268		122.86466	104.28952		104.28952	136.61927	324.3404	2.9624522	7.0329973	no
2,3-Dichlorophenol												no
2,5-Dichlorophenol												no
2,6-Dichlorophenol												no
3,4-Dichlorophenol												no
2.4-Dichlorophenocy-												
acetic acid (2,4-D)												no
2-(2,4,5-Trichlorophen-												
oxy) propionic acid												
(2,4,5-TP, Silvex)	0.00											no
(2,4,5-1F, 511VEX/												
METALS AND CYANIDE												
Total Arsenic	537.80563	242 20492		172 0978	128.63361		128 63361	168 51002	400.05051	3 6539714	8 6746953	no
				52.664463					8.6999882			no
Total Cadmium	164.57645				473.24636				1471.7962			no
Chromium III	2692.5208 15.751056				5.7478734				15.675451			no
Chromium VI	15.751056	10.845044		5.040336	3.7476734		3.040330	0.0020420	13.073431	0.145170	0.3333003	110
	45 373440	20 (((252		14 519504	16 253167		14 519504	19 02055	45 155656	0 4124416	0 9791553	no
Total Copper	45.373449	THE PROPERTY OF		14.519504	DESCRIPTION OF THE PROPERTY.	STATE OF THE PARTY	CALCULATED BY	OFFICE REPORT	45.155656	PRINCEPONE SERVICE	SHAPE CHAPTER STATES	no
Total Lead	302,777	12.062092	3-4-	96.88864	6.3929088		6.3929088	8.3747105	19.881946	0.1815972	0.4311201	yes
Total Lead Total Mercury	302.777	0.044665		96.88864 2.0202256	6.3929088 0.0236725		6.3929088 0.0236725	B.3747105	19.881946 0.0736213	0.1815972 0.0006724	0.4311201	yes
Total Lead Total Mercury Total Nickel	302.777 6.3132051 2553.4271	12.062092 0.044665 289.90702		96.88864 2.0202256 817.09667	6.3929088 0.0236725 153.65072		6.3929088 0.0236725 153.65072	B.3747105 0.0310109 201.28245	19.881946 0.0736213 477.85375	0.1815972 0.0006724 4.3646086	0.4311201 0.0015964 10.361781	yes no no
Total Lead Total Mercury Total Nickel Total Zinc	302,777 6.3132051 2553.4271 315.79619	12.062092 0.044665 289.90702 294.8052		96.88864 2.0202256 817.09667 101.05478	6.3929088 0.0236725 153.65072 156.24675		6.3929088 0.0236725 153.65072 101.05478	8,3747105 0.0310109 201.28245 132.38176	19.881946 0.0736213 477.85375 314.28036	0.1815972 0.0006724 4.3646086 2.8705661	0.4311201 0.0015964 10.361781 6.8148554	yes no no
Total Lead Total Mercury Total Nickel	302,777 6.3132051 2553.4271 315.79619	12.062092 0.044665 289.90702 294.8052		96.88864 2.0202256 817.09667 101.05478	6.3929088 0.0236725 153.65072 156.24675		6.3929088 0.0236725 153.65072 101.05478	8,3747105 0.0310109 201.28245 132.38176	19.881946 0.0736213 477.85375	0.1815972 0.0006724 4.3646086 2.8705661	0.4311201 0.0015964 10.361781 6.8148554	yes no no
Total Lead Total Mercury Total Nickel Total Zinc Total Cyanide	302,777 6.3132051 2553.4271 315.79619	12.062092 0.044665 289.90702 294.8052		96.88864 2.0202256 817.09667 101.05478	6.3929088 0.0236725 153.65072 156.24675		6.3929088 0.0236725 153.65072 101.05478	8,3747105 0.0310109 201.28245 132.38176	19.881946 0.0736213 477.85375 314.28036	0.1815972 0.0006724 4.3646086 2.8705661	0.4311201 0.0015964 10.361781 6.8148554	yes no no
Total Lead Total Mercury Total Nickel Total Zinc Total Cyanide	302,777 6.3132051 2553.4271 315.79619	12.062092 0.044665 289.90702 294.8052	13163.272	96.88864 2.0202256 817.09667 101.05478	6.3929088 0.0236725 153.65072 156.24675	13163.272	6.3929088 0.0236725 153.65072 101.05478 2.9331427	8,3747105 0.0310109 201.28245 132.38176 3.842417	19\881946 0.0736213 477.85375 314.28036 9.1220738	0.1815972 0.0006724 4.3646086 2.8705661 0.083319	0,4311201 0,0015964 10,361781 6,8148554 0,197803	yes no no no
Total Lead Total Mercury Total Nickel Total Zinc Total Cyanide	302,777 6.3132051 2553.4271 315.79619	12.062092 0.044665 289.90702 294.8052		96.88864 2.0202256 817.09667 101.05478	6.3929088 0.0236725 153.65072 156.24675	13163.272	6.3929088 0.0236725 153.65072 101.05478 2.9331427	8,3747105 0.0310109 201.28245 132.38176 3.842417	19.881946 0.0736213 477.85375 314.28036	0.1815972 0.0006724 4.3646086 2.8705661 0.083319	0,4311201 0,0015964 10,361781 6,8148554 0,197803	yes no no
Total Lead Total Mercury Total Nickel Total Zinc Total Cyanide DIOXIN 2,3,7,8 TCDD; dioxin	302,777 6.3132051 2553.4271 315.79619	12.062092 0.044665 289.90702 294.8052	13163.272	96.88864 2.0202256 817.09667 101.05478	6.3929088 0.0236725 153.65072 156.24675	13163.272	6.3929088 0.0236725 153.65072 101.05478 2.9331427	8,3747105 0.0310109 201.28245 132.38176 3.842417	19\881946 0.0736213 477.85375 314.28036 9.1220738	0.1815972 0.0006724 4.3646086 2.8705661 0.083319	0,4311201 0,0015964 10,361781 6,8148554 0,197803	yes no no no
Total Lead Total Mercury Total Nickel Total Zinc Total Cyanide DIOXIN 2,3,7,8 TCDD; dioxin VOLATILE COMPOUNDS	302,777 6.3132051 2553.4271 315,79619 46.014097	12.062092 0.044665 289.90702 294.8052 5.5342315	13163.272 8.99E-07	96.88864 2.0202256 817.09667 101.05478 14.724511	6.3929088 0.0236725 153.65072 156.24675 2.9331427	13163.272 8.99E-07	6.3929088 0.0236725 153.65072 101.05478 2.9331427 8.99E-07	B:3747105 0.0310109 201.28245 132.38176 3.842417	19.881946 0.0736213 477.85375 314.28036 9.1220738	0.1815972 0.0006724 4.3646086 2.8705661 0.083319	0.4311201 0.0015964 10.361781 6,8148554 0.197803	yes no no no
Total Lead Total Mercury Total Nickel Total Zinc Total Cyanide DIOXIN 2,3,7,8 TCDD; dioxin VOLATILE COMPOUNDS Benzene	302,777 6.3132051 2553.4271 315,79619 46.014097	12.062092 0.044665 289.90702 294.8052 5.5342315	13163.272 8.99E-07	96.88864 2.0202256 817.09667 101.05478 14.724511	6.3929088 0.0236725 153.65072 156.24675 2.9331427	13163.272 8.99E-07	6.3929088 0.0236725 153.65072 101.05478 2.9331427 8.99E-07	8:3747105 0:0310109 201:28245 132:38176 3:842417 8:99E-07	19.881946 0.0736213 477.85375 314.28036 9.1220738 2.14E-06	0.1815972 0.0006724 4.3646086 2.8705661 0.083319 1.949E-08	0.4311201 0.0015964 10.361781 6.8148554 0.197803 4.639E-08	yes no no no no no
Total Lead Total Mercury Total Nickel Total Zinc Total Cyanide  DIOXIN 2,3,7,8 TCDD; dioxin  VOLATILE COMPOUNDS Benzene Bromoform	302,777 6.3132051 2553.4271 315,79619 46.014097	12.062092 0.044665 289.90702 294.8052 5.5342315	8.99E-07 15.607212 43.325619	96.88864 2.0202256 817.09667 101.05478 14.724511 721.46896 939.93066	6.3929088 0.0236725 153.65072 156.24675 2.9331427 611.0714 795.75076	8.99E-07 15.607212 43.325619	6.3929088 0.0236725 153.65072 101.05478 2.9331427 8.99E-07 15.607212 43.325619	8:3747105 0:0310109 201:28245 132:38176 3:842417 8:99E-07	19.881946 0.0736213 477.85375 314.28036 9.1220738 2.14E-06 37.145163 103.11497	0.1815972 0.0006724 4.3646086 2.8705661 0.083319 1.949E-08 0.3384268 0.9394727	0.4311201 0.0015964 10.361781 6.8148554 0.197803 4.639E-08	yes no no no no no
Total Lead Total Mercury Total Nickel Total Zinc Total Cyanide  DIOXIN 2,3,7,8 TCDD; dioxin  VOLATILE COMPOUNDS Benzene Bromoform Bromodichloromethane	302,777 6.3132051 2553.4271 315,79619 46.014097	12.062092 0.044665 289.90702 294.8052 5.5342315	8.99E-07 15.607212 43.325619 4.1203038	96.88864 2.0202256 817.09667 101.05478 14.724511 721.46896 939.93066	6.3929088 0.0236725 153.65072 156.24675 2.9331427 611.0714 795.75076	8.99E-07 15.607212 43.325619 4.1203038	6.3929088 0.0236725 153.65072 101.05478 2.9331427 8.99E-07 15.607212 43.325619 4.1203038	8.3747105 0.0310109 201.28245 132.38176 3.842417 8.99E-07 15.607212 43.325619 4.1203038	19.881946 0.0736213 477.85375 314.28036 9.1220738 2.14E-06 37.145163 103.11497 9.8063232	0.1815972 0.0006724 4.3646086 2.8705661 0.083319 1.949E-08 0.3384268 0.9394727 0.0893447	0.4311201 0.0015964 10.361781 6.8148554 0.197803 4.639E-08 0.8054557 2.2359451 0.2126403	yes no no no no no
Total Lead Total Mercury Total Nickel Total Zinc Total Cyanide  DIOXIN 2,3,7,8 TCDD; dioxin  VOLATILE COMPOUNDS Benzene Bromoform Bromodichloromethane Carbon Tetrachloride	302,777 6.3132051 2553.4271 315.79619 46.014097 2254.5905 2937.2833	12.062092 0.044665 289.90702 294.8052 5.5342315 1152.9649 1501.4165	8.99E-07 15.607212 43.325619 4.1203038 1.4982923	96.88864 2.0202256 817.09667 101.05478 14.724511 721.46896 939.93066	6.3929088 0.0236725 153.65072 156.24675 2.9331427 611.0714 795.75076	8.99E-07 15.607212 43.325619 4.1203038 1.4982923	6.3929088 0.0236725 153.65072 101.05478 2.9331427 8.99E-07 15.607212 43.325619 4.1203038 1.4982923	8.3747105 0.0310109 201.28245 132.38176 3.842417 8.99E-07 15.607212 43.325619 4.1203038 1.4982923	19.881946 0.0736213 477.85375 314.28036 9.1220738 2.14E-06 37.145163 103.11497 9.8063232 3.5659357	0.1815972 0.0006724 4.3646086 2.8705661 0.083319 1.949E-08 0.3384268 0.9394727 0.0893447 0.032489	0.4311201 0.0015964 10.361781 6.8148554 0.197803 4.639E-08 0.8054557 2.2359451 0.2126403 0.0773237	yes no
Total Lead Total Mercury Total Nickel Total Zinc Total Cyanide  DIOXIN 2,3,7,8 TCDD; dioxin  VOLATILE COMPOUNDS Benzene Bromoform Bromodichloromethane Carbon Tetrachloride Chloroform	302,777 6.3132051 2553.4271 315.79619 46.014097 2254.5905 2937.2833	12.062092 0.044665 289.90702 294.8052 5.5342315  1152.9649 1501.4165  1398.9308 1480.9194	8.99E-07 15.607212 43.325619 4.1203038 1.4982923 87.400385	96.88864 2.0202256 817.09667 101.05478 14.724511 721.46896 939.93066 875.77157 927.09884	6.3929088 0.0236725 153.65072 156.24675 2.9331427 611.0714 795.75076  741.4333 784.88726	8.99E-07 15.607212 43.325619 4.1203038 1.4982923	6.3929088 0.0236725 153.65072 101.05478 2.9331427 8.99E-07 15.607212 43.325619 4.1203038 1.4982923 87.400385	8.3747105 0.0310109 201.28245 132.38176 3.842417 8.99E-07 15.607212 43.325619 4.1203038 1.4982923 87.400385	19.881946 0.0736213 477.85375 314.28036 9.1220738 2.14E-06 37.145163 103.11497 9.8063232 3.5659357 208.01292	0.1815972 0.0006724 4.3646086 2.8705661 0.083319 1.949E-08 0.3384268 0.9394727 0.0893447 0.032489 1.8951899	0.4311201 0.0015964 10.361781 6,8148554 0.197803 4.639E-08 0.8054557 2.2359451 0.2126403 0.0773237 4.5105521	yes no
Total Lead Total Mercury Total Nickel Total Zinc Total Cyanide  DIOXIN 2,3,7,8 TCDD; dioxin  VOLATILE COMPOUNDS Benzene Bromoform Bromodichloromethane Carbon Tetrachloride Chloroform Dibromochloromethane	302,777 6.3132051 2553.4271 315.79619 46.014097 2254.5905 2937.2833 2736.7862 2897.1839	12.062092 0.044665 289.90702 294.8052 5.5342315  1152.9649 1501.4165  1398.9308 1480.9194	8.99E-07 15.607212 43.325619 4.1203038 1.4982923 87.400385 6.3427708	96.88864 2.0202256 817.09667 101.05478 14.724511 721.46896 939.93066 875.77157 927.09884	6.3929088 0.0236725 153.65072 156.24675 2.9331427 611.0714 795.75076  741.4333 784.88726	8.99E-07 15.607212 43.325619 4.1203038 1.4982923 67.400385 6.3427708	6.3929088 0.0236725 153.65072 101.05478 2.9331427 8.99E-07 15.607212 43.325619 4.1203038 1.4982923 87.400385 6.3427708	8.3747105 0.0310109 201.28245 132.38176 3.842417 8.99E-07 15.607212 43.325619 4.1203038 1.4982923 87.400385 6.3427708	19.881946 0.0736213 477.85375 314.28036 9.1220738 2.14E-06 37.145163 103.11497 9.8063232 3.5659357 208.01292 15.095794	0.1815972 0.0006724 4.3646086 2.8705661 0.083319 1.949E-08 0.3384268 0.9394727 0.0893447 0.032489 1.8951899 0.1375366	0.4311201 0.0015964 10.361781 6,8148554 0.197803 4.639E-08 0.8054557 2.2359451 0.2126403 0.0773237 4.5105521 0.3273372	yes no
Total Lead Total Mercury Total Nickel Total Zinc Total Cyanide  DIOXIN 2,3,7,8 TCDD; dioxin  VOLATILE COMPOUNDS Benzene Bromoform Bromodichloromethane Carbon Tetrachloride Chloroform Dibromochloromethane 1,2-Dichloroethane	302,777 6.3132051 2553.4271 315.79619 46.014097 2254.5905 2937.2833 2736.7862 2897.1839	12.062092 0.044665 289.90702 294.8052 5.5342315  1152.9649 1501.4165  1398.9308 1480.9194  6046.6604	8.99E-07 15.607212 43.325619 4.1203038 1.4982923 87.400385 6.3427708 8.4903231	96.88864 2.0202256 817.09667 101.05478 14.724511 721.46896 939.93066 875.77157 927.09884	6.3929088 0.0236725 153.65072 156.24675 2.9331427 611.0714 795.75076  741.4333 784.88726	8.99E-07 15.607212 43.325619 4.1203038 1.4982923 87.400385 6.3427708 8.4903231	6.3929088 0.0236725 153.65072 101.05478 2.9331427 8.99E-07 15.607212 43.325619 4.1203038 1.4982923 67.400385 6.3427708 8.4903231	8.3747105 0.0310109 201.28245 132.38176 3.842417 8.99E-07 15.607212 43.325619 4.1203038 1.4982923 87.400385 6.3427708 8.4903231	19.881946 0.0736213 477.85375 314.28036 9.1220738 2.14E-06 37.145163 103.11497 9.8063232 3.5659357 208.01292 15.095794 20.206969	0.1815972 0.0006724 4.3646086 2.8705661 0.083319 1.949E-08 0.3384268 0.9394727 0.0893447 0.032489 1.8951899 0.1375366 0.1841042	0.4311201 0.0015964 10.361781 6,8148554 0.197803 4.639E-08 0.8054557 2.2359451 0.2126403 0.0773237 4.5105521 0.3273372 0.4381679	yes no
Total Lead Total Mercury Total Nickel Total Zinc Total Cyanide  DIOXIN 2,3,7,8 TCDD; dioxin  VOLATILE COMPOUNDS Benzene Bromoform Bromodichloromethane Carbon Tetrachloride Chloroform Dibromochloromethane 1,2-Dichloroethane 1,1-Dichloroethylene	302,777 6.3132051 2553.4271 315,79619 46.014097 2254.5905 2937.2833 2736.7862 2897.1839 11829.332 1162.8835	12.062092 0.044665 289.90702 294.8052 5.5342315 1152.9649 1501.4165  1398.9308 1480.9194 6046.6604 594.41746	8.99E-07 15.607212 43.325619 4.1203038 1.4982923 87.400385 6.3427708 8.4903231 0.7241746	96.88864 2.0202256 817.09667 101.05478 14.724511 721.46896 939.93066 875.77157 927.09884 3785.3863 372.12272	6.3929088 0.0236725 153.65072 156.24675 2.9331427 611.0714 795.75076 741.4333 784.88726	8.99E-07 15.607212 43.325619 4.1203038 1.4982923 87.400385 6.3427708 8.4903231 0.7241746	6.3929088 0.0236725 153.65072 101.05478 2.9331427 8.99E-07 15.607212 43.325619 4.1203038 1.4982923 87.400385 6.3427708 8.4903231 0.7241746	8.3747105 0.0310109 201.28245 132.38176 3.842417 8.99E-07 15.607212 43.325619 4.1203038 1.4982923 87.400385 6.3427708 8.4903231 0.7241746	19.881946 0.0736213 477.85375 314.28036 9.1220738 2.14E-06 37.145163 103.11497 9.8063232 3.5659357 208.01292 15.095794 20.206969 1.7235356	0.1815972 0.0006724 4.3646086 2.8705661 0.083319 1.949E-08 0.3384268 0.9394727 0.0893447 0.032489 1.8951899 0.1375366 0.1841042 0.015703	0.4311201 0.0015964 10.361781 6.8148554 0.197803 4.639E-08 0.8054557 2.2359451 0.2126403 0.0773237 4.5105521 0.3273372 0.4381679 0.0373731	yes no
Total Lead Total Mercury Total Nickel Total Zinc Total Cyanide  DIOXIN 2,3,7,8 TCDD; dioxin  VOLATILE COMPOUNDS Benzene Bromoform Bromodichloromethane Carbon Tetrachloride Chloroform Dibromochloromethane 1,2-Dichloroethane 1,1-Dichloroethylene 1,3-Dichloropropylene	302,777 6.3132051 2553.4271 315,79619 46.014097 2254.5905 2937.2833 2736.7862 2897.1839 11829.332 1162.8835 607.50638	12.062092 0.044665 289.90702 294.8052 5.5342315 1152.9649 1501.4165  1398.9308 1480.9194  6046.6604 594.41746 310.53188	8.99E-07 15.607212 43.325619 4.1203038 1.4982923 87.400385 6.3427708 8.4903231 0.7241746 166.83658	96.88864 2.0202256 817.09667 101.05478 14.724511 721.46896 939.93066 875.77157 927.09884  3785.3863 372.12272 194.40204	6.3929088 0.0236725 153.65072 156.24675 2.9331427 611.0714 795.75076  741.4333 784.88726  3204.73 315.04125 164.5819	8.99E-07 15.607212 43.325619 4.1203038 1.4982923 87.400385 6.3427708 8.4903231 0.7241746 166.83658	6.3929088 0.0236725 153.65072 101.05478 2.9331427 8.99E-07 15.607212 43.325619 4.1203038 1.4982923 87.400385 6.3427708 8.4903231 0.7241746 164.5819	8.3747105 0.0310109 201.28245 132.38176 3.842417 8.99E-07 15.607212 43.325619 4.1203038 1.4982923 87.400385 6.3427708 8.4903233 0.7241746 215.60228	19.881946 0.0736213 477.85375 314.28036 9.1220738 2.14E-06 37.145163 103.11497 9.8063232 3.5659357 208.01292 15.095794 20.206969 1.7235356	0.1815972 0.0006724 4.3646086 2.8705661 0.083319 1.949E-08 0.3384268 0.9394727 0.0893447 0.032489 1.8951899 0.1375366 0.1841042 0.015703 4.6751199	0.4311201 0.0015964 10.361781 6.8148554 0.197803 4.639E-08 0.8054557 2.2359451 0.2126403 0.0773237 4.5105521 0.3273372 0.4381679 0.0373731 11.098949	yes no
Total Lead Total Mercury Total Nickel Total Zinc Total Zinc Total Cyanide  DIOXIN 2,3,7,8 TCDD; dioxin  VOLATILE COMPOUNDS Benzene Bromoform Bromodichloromethane Carbon Tetrachloride Chloroform Dibromochloromethane 1,2-Dichloroethane 1,1-Dichloroethylene 1,3-Dichloropropylene Ethylbenzene	302,777 6.3132051 2553.4271 315.79619 46.014097 2254.5905 2937.2833 2736.7862 2897.1839 11829.332 1162.8835 607.50638 3207.9545	12.062092 0.044665 289.90702 294.8052 5.5342315 1152.9649 1501.4165  1398.9308 1480.9194  6046.6604 594.41746 310.53188 1639.7723	8.99E-07 15.607212 43.325619 4.1203038 1.4982923 87.400385 6.3427708 8.4903231 0.7241746 166.83658 8301.3473	96.88864 2.0202256 817.09667 101.05478 14.724511 721.46896 939.93066  875.77157 927.09884  3785.3863 372.12272 194.40204 1026.5454	6.3929088 0.0236725 153.65072 156.24675 2.9331427 611.0714 795.75076  741.4333 784.88726  3204.73 315.04125 164.5819 869.07932	8.99E-07 15.607212 43.325619 4.1203038 1.4982923 87.400385 6.3427708 8.4903231 0.7241746 166.83658 8301.3473	6.3929088 0.0236725 153.65072 101.05478 2.9331427 8.99E-07 15.607212 43.325619 4.1203038 1.4982923 87.400385 6.3427708 8.4903231 0.7241746 164.5819 869.07932	8.3747105 0.0310109 201.28245 132.38176 3.842417 8.99E-07 15.607212 43.325619 4.1203038 1.4982923 87.400385 6.3427708 8.4903231 0.7241746 215.60228 1138.4935	19.881946 0.0736213 477.85375 314.28036 9.1220738 2.14E-06 37.145163 103.11497 9.8063232 3.5659357 208.01292 15.095794 20.206969 1.7235356 511.8497	0.1815972 0.0006724 4.3646086 2.8705661 0.083319 1.949E-08 0.3384268 0.9394727 0.0893447 0.032489 1.8951899 0.1375366 0.1841042 0.015703 4.6751199 24.687102	0.4311201 0.0015964 10.361781 6.8148556 0.197803 4.639E-08 0.8054557 2.2359451 0.2126403 0.0773237 4.5105521 0.3273372 0.4381679 0.0373731 11.098949 58.608311	yes no
Total Lead Total Mercury Total Nickel Total Zinc Total Zinc Total Cyanide  DIOXIN 2,3,7,8 TCDD; dioxin  VOLATILE COMPOUNDS Benzene Bromoform Bromodichloromethane Carbon Tetrachloride Chloroform Dibromochloromethane 1,2-Dichloroethane 1,1-Dichloroethylene 1,3-Dichloropropylene Ethylbenzene Methyl Chloride	302,777 6.3132051 2553.4271 315.79619 46.014097  2254.5905 2937.2833 2736.7862 2897.1839 11829.332 1162.8835 607.50638 3207.9545 55136.717	12.062092 0.044665 289.90702 294.8052 5.5342315 1152.9649 1501.4165  1398.9308 1480.9194  6046.6604 594.41746 310.53188 1639.7723 28183.587	8.99E-07 15.607212 43.325619 4.1203038 1.4982923 87.400385 6.3427708 8.4903231 0.7241746 166.83658 8301.3473	96.86864 2.0202256 817.09667 101.05478 14.724511 721.46896 939.93066 875.77157 927.09884  3785.3863 372.12272 194.40204 1026.5454 17643.75	6.3929088 0.0236725 153.65072 156.24675 2.9331427 611.0714 795.75076  741.4333 784.88726 3204.73 315.04125 164.5819 869.07932 14937.301	8.99E-07 15.607212 43.325619 4.1203038 1.4982923 87.400385 6.3427708 8.4903231 0.7241746 166.83658 8301.3473	6.3929088 0.0236725 153.65072 101.05478 2.9331427 8.99E-07 15.607212 43.325619 4.1203038 1.4982923 87.400385 6.3427708 8.4903231 0.7241746 164.5819 869.07932 14937.301	8.3747105 0.0310109 201.28245 132.38176 3.842417 8.99E-07 15.607212 43.325619 4.1203038 1.4982923 87.400385 6.3427708 8.4903231 0.7241746 215.60228 1138.4935 19567.866	19.881946 0.0736213 477.85375 314.28036 9.1220738 2.14E-06 37.145163 103.11497 9.8063232 3.5659357 208.01292 15.095794 20.206969 1.7235356 511.8497 2702.8367 46455.006	0.1815972 0.0006724 4.3646086 2.8705661 0.083319 1.949E-08 0.3384268 0.9394727 0.0893447 0.032489 1.8951899 0.1375366 0.1841042 0.015703 4.6751199 24.687102 424.30957	0.4311201 0.0015964 10.361781 6.8148556 0.197803 4.639E-08 0.8054557 2.2359451 0.2126403 0.0773237 4.5105521 0.3273372 0.4381679 0.0373731 11.098949 58.608311 1007.3303	yes no
Total Lead Total Mercury Total Nickel Total Zinc Total Zinc Total Cyanide  DIOXIN 2,3,7,8 TCDD; dioxin  VOLATILE COMPOUNDS Benzene Bromoform Bromodichloromethane Carbon Tetrachloride Chloroform Dibromochloromethane 1,2-Dichloroethane 1,1-Dichloroethylene 1,3-Dichloropropylene Ethylbenzene Methyl Chloride Methylene Chloride	302,777 6.3132051 2553.4271 315.79619 46.014097  2254.5905 2937.2833 2736.7862 2897.1839 11829.332 1162.8835 607.50638 3207.9545 55136.717	12.062092 0.044665 289.90702 294.8052 5.5342315 1152.9649 1501.4165  1398.9308 1480.9194  6046.6604 594.41746 310.53188 1639.7723 28183.587	8.99E-07 15.607212 43.325619 4.1203038 1.4982923 87.400385 6.3427708 8.4903231 0.7241746 166.83658 8301.3473	96.86864 2.0202256 817.09667 101.05478 14.724511 721.46896 939.93066 875.77157 927.09884  3785.3863 372.12272 194.40204 1026.5454 17643.75	6.3929088 0.0236725 153.65072 156.24675 2.9331427 611.0714 795.75076  741.4333 784.88726 3204.73 315.04125 164.5819 869.07932 14937.301	8.99E-07 15.607212 43.325619 4.1203038 1.4982923 87.400385 6.3427708 8.4903231 0.7241746 166.83658 8301.3473	6.3929088 0.0236725 153.65072 101.05478 2.9331427 8.99E-07 15.607212 43.325619 4.1203038 1.4982923 87.400385 6.3427708 8.4903231 0.7241746 164.5819 869.07932 14937.301	8.3747105 0.0310109 201.28245 132.38176 3.842417 8.99E-07 15.607212 43.325619 4.1203038 1.4982923 87.400385 6.3427708 8.4903231 0.7241746 215.60228 1138.4935 19567.866	19.881946 0.0736213 477.85375 314.28036 9.1220738 2.14E-06 37.145163 103.11497 9.8063232 3.5659357 208.01292 15.095794 20.206969 1.7235356 511.8497	0.1815972 0.0006724 4.3646086 2.8705661 0.083319 1.949E-08 0.3384268 0.9394727 0.0893447 0.032489 1.8951899 0.1375366 0.1841042 0.015703 4.6751199 24.687102 424.30957	0.4311201 0.0015964 10.361781 6.8148556 0.197803 4.639E-08 0.8054557 2.2359451 0.2126403 0.0773237 4.5105521 0.3273372 0.4381679 0.0373731 11.098949 58.608311 1007.3303	yes no
Total Lead Total Mercury Total Nickel Total Zinc Total Zinc Total Cyanide  DIOXIN 2,3,7,8 TCDD; dioxin  VOLATILE COMPOUNDS Benzene Bromoform Bromodichloromethane Carbon Tetrachloride Chloroform Dibromochloromethane 1,2-Dichloroethane 1,1-Dichloroethylene 1,3-Dichloropropylene Ethylbenzene Methyl Chloride	302,777 6.3132051 2553.4271 315.79619 46.014097  2254.5905 2937.2833 2736.7862 2897.1839 11829.332 1162.8835 607.50638 3207.9545 55136.717 19347.975	12.062092 0.044665 289.90702 294.8052 5.5342315 1152.9649 1501.4165 1398.9308 1480.9194  6046.6604 594.41746 310.53188 1639.7723 28183.587 9889.8767	8.99E-07 15.607212 43.325619 4.1203038 1.4982923 87.400385 6.3427708 8.4903231 0.7241746 166.83658 8301.3473	721.46896 939.93066 875.77157 927.09884 3785.3863 372.12272 194.40204 1026.5454 17643.75	6.3929088 0.0236725 153.65072 156.24675 2.9331427 611.0714 795.75076  741.4333 784.88726 3204.73 315.04125 164.5819 869.07932 14937.301 5241.6347	8.99E-07  15.607212 43.325619 4.1203038 1.4982923 87.400385 6.3427708 8.4903231 0.7241746 166.83658 8301.3473	6.3929088 0.0236725 153.65072 101.05478 2.9331427 8.99E-07 15.607212 43.325619 4.1203038 1.4982923 87.400385 6.3427708 8.4903231 0.7241746 164.5819 869.07932 14937.301 108.62619	8.3747105 0.0310109 201.28245 132.38176 3.842417 8.99E-07 15.607212 43.325619 4.1203038 1.4982923 87.400385 6.3427708 8.4903231 0.7241746 215.60228 1138.4938 19567.864	19.881946 0.0736213 477.85375 314.28036 9.1220738 2.14E-06 37.145163 103.11497 9.8063232 3.5659357 208.01292 15.095794 20.206969 1.7235356 511.8497 2702.8367 46455.006	0.1815972 0.0006724 4.3646086 2.8705661 0.083319 1.949E-08 0.3384268 0.9394727 0.0893447 0.032489 1.8951899 0.1375366 0.1841042 0.015703 4.6751199 24.687102 424.30957 2.3554504	0.4311201 0.0015964 10.361781 6,8148554 0.197803 4.639E-08 0.8054557 2.2359451 0.2126403 0.0773237 4.5105521 0.3273372 0.4381679 0.0373731 11.098949 58.608311 1007.3303 5.6059718	yes no

Appendix B-1

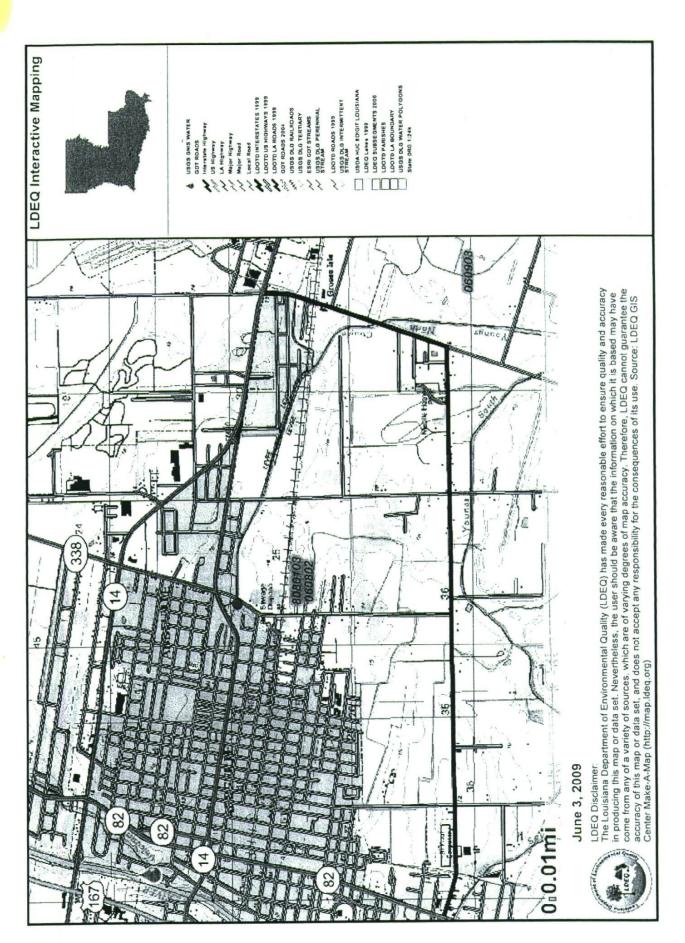
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(*1)	(*2)	(*3)	(*4)	(*5)	(*6)	( • 7 )	(+8)	(*9)	(*10)	(*11)
Toxic	Cu	Effluent	Effluent	MQL	Effluent	95th %	Nume	rical Cris		нн
Parameters	Instream	/Tech	/Tech		1=No 95%	estimate	Acute	Chronic	HHNDW	Carcinogen
	Conc.	(Avg)	(Max)		0=95 %	Non-Tech	FW	FW		Indicator
	ug/L	ug/L	ug/L	lbs/day		ug/L	ug/L	ug/L	ug/L	"C"
VOLATILE COMPOUNDS (cont'd	1)									
Tetrachloroethylene				0.21684			1290	645	2.5	С
Toluene				0.21684			1270	635	46200	
1,1,1-Trichloroethane				0.21684			5280	2640		
1,1,2-Trichloroethane				0.21684			1800	900	6.9	С
Trichloroethylene				0.21684			3900	1950	21	С
Vinyl Chloride				0.21684					35.8	С
ACID COMPOUNDS										
2-Chlorophenol				0.21684			258	129	126.4	
2,4-Dichlorophenol				0.21684			202	101	232.6	
									232.0	
BASE NEUTRAL COMPOUNDS										
Benzidine				1.0842			250	125	0.00017	C
Hexachlorobenzene				0.21684				123	0.00025	С
Hexachlorabutadiene				0.21684			5.1	1.02	0.11	C
									0.11	
PESTICIDES										
Aldrin				0.001084			3		0.0004	С
Hexachlorocyclohexane										
(gamma BHC, Lindane)				0.001084			5.3	0.21	0.2	С
Chlordane				0.004337			2.4	0.0043	0.00019	С
4,4'-DDT				0.002168			1.1	0.001	0.00019	С
4,4'-DDE				0.002168			52.5	10.5	0.00019	С
4,4'-DDD				0.002168			0.03	0.006	0.00027	С
Dieldrin				0.002168			0.2374	0.0557	0.00005	С
Endosulfan				0.002168			0.22	0.056	0.64	
Endrin				0.002168			0.0864	0.0375	0.26	
Heptachlor				0.001084			0.52	0.0038	0.00007	C
							2	0.014		
Toxaphene				0.10842			0.73	0.0002	0.00024	С
Other Parameters:										
Fecal Col.(col/100ml)										
Chlorine				2.1684			19	11		
Ammonia										
Chlorides										
Sulfates										
TDS			¥							

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									(-20)	(-21)	(+22)	(-22)
(*1)	(*12)	(*13)	(*14)	(*15)	(*16)	(*17)	(*18)	(*19)	(*20)	(*21) WQBL	(*22)	Need
Toxic	WLAa	WLAC	WLAh	LTAa	LTAC		Limiting	WOBL	WQBL	Avg		WQBL?
Parameters	Acute	Chronic	HHNDW	Acute	Chronic	HHNDW	A, C, HH	001	001	001	001	"QDL;
		/>	/3	/*	ua /1	110 /I	na/1	ug/L		lbs/day		
	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	09/1	105/004	1DB/ day	
	1293.2066		2 1214423	413 92613	350 3476	3 1214423	3 1214423	3 1214423	7 4290327	0.0676854	0.1610911	no
Tetrachloroethylene	1273.1569											
Toluene	5293.1249		1/340.423		1433.9809				4459.6805			
1,1,1-Trichloroethane 1,1,2-Trichloroethane	1804.4744											
Trichloroethylene	3909.6945											
Vinyl Chloride			44.699054						106.38375			
Vinyi chioride												
ACID COMPOUNDS												
2-Chlorophenol	258.64133	132.20664	129.54201	82.765225	70.06952	129.54201	70.06952	91.791072	217.91621	1.9903976	4.7252951	no
2,4-Dichlorophenol									170.61657			
2,1 Dichiotophonos												
BASE NEUTRAL COMPOUNDS												
Benzidine	250.62144	128.10721	0.0002123	80.198862	67.896822	0.0002123	0.0002123	0.0002123	0.0005052	4.603E-06	1.095E-05	no
Hexachlorobenzene			0.0003121			0.0003121	0.0003121	0.0003121	0.0007429	6.769E-06	1.611E-05	no
Hexachlorabutadiene	5.1126774	1.0453548	0.1373435	1.6360568	0.5540381	0.1373435	0.1373435	0.1373435	0.3268774	0.0029782	0.007088	no
PESTICIDES												
Aldrin	3.0074573		0.0004994	0.9623863		0.0004994	0.0004994	0.0004994	0.0011886	1.083E-05	2.577E-05	no
Hexachlorocyclohexane												
(gamma BHC, Lindane)									0.3547473			
Chlordane									0.0005646			
4 , 4 ' - DDT									2 0.0005646			
4 , 4 ' - DDE									0.0005646			
4 , 4 ' - DDD									0.0008023			
Dieldrin									5 0.0001486			
Endosulfan									3 0.0945993 5 0.0633477			
Endrin									5 0.000208			
Heptachlor	0.5212926	0.0038945	8.74E-05	0.1668136	0.0020641	8.74E-0	8.74E-0	0.746-0	5 0.000200	1.0552 0	0 4.5112 0	
	0 7230346	0 000205	0 000388	2 0 234180	7 0 0001086	0 000299	7 0 0001086	0.000142	3 0.0003375	3.086E-0	6 7.326E-0	6 no
Toxaphene	0.7318146	0.000205	0.000299	0.234100	0.0001000	0.000233						
Aller Presentant												
Other Parameters: Fecal Col.(col/100ml)												no
Chlorine		11.273435		6.095113	5 5 . 9749203	3	5.974920	3 7.827145	7 18.582002	0.169723	8 0.402932	1 no
	17.01/23											no
Ammonia Chlorides												no
Sulfates												no
TDS												no
. 22												
												no
												no

Page 1 of



#### MEMORANDUM

TO: Afton Bessix

FROM: Todd Franklin

DATE: June 4, 2009

RE: Stream Flow and Water Quality Characteristics for Youngs Coulee North,

receiving waters for the City of Abbeville / Abbeville Wastewater Treatment

Facility

Permit No. LA0039748, AI: 20037

Determination of the water quality characteristics for Outfall 001 was taken from random site number 2349 (Youngs North Coulee at the bridge on LA Highway 14, 0.15 mile upstream from the sewage treatment plant in Abbeville, Louisiana). The following TSS and hardness results were obtained from six separate samples.

Average hardness = 110 mg/l 15<sup>th</sup> percentile TSS = 2 mg/l

The discharge is into an unnamed drainage canal before flowing into Youngs Coulee North. The unnamed drainage canal is primarily used for the conveyance of stormwater. Therefore, under critical conditions, this ditch is not expected to have water flowing through it. Therefore, the default critical low flow (7Q10) for permit limit calculations is 0.1 cfs and the harmonic mean flow is 1 cfs.

If you have additional questions or comments, please contact me at 2-3102.

# BIOMONITORING FREQUENCY RECOMMENDATION AND RATIONALE FOR ADDITIONAL REQUIREMENTS

Permit Number: LA0039748

Facility Name: City of Abbeville/Abbeville WWTF

Previous Critical Biomonitoring Dilution: 98%

Proposed Critical Biomonitoring Dilution: 98% (WET Limit)

Date of Review: 06/22/09

Name of Reviewer: Laura Thompson

Recommended Frequency by Species for Outfall 002:

Pimephales promelas (Fathead minnow): Once/Quarter<sup>1</sup>
Ceriodaphnia dubia (water flea): Once/Quarter<sup>1</sup>

Recommended Dilution Series: 31%, 41%, 55%, 73%, and 98%

Number of Tests Performed during previous 5 years by Species:

Pimephales promelas (Fathead minnow): 18

Daphnia pulex (water flea): N/A – Testing of species was not required

Ceriodaphnia dubia (water flea): 18

Number of Failed Tests during previous 5 years by Species:

Pimephales promelas (Fathead minnow): 2 lethal, 3 sub-lethal

Daphnia pulex (water flea): N/A – Testing of species was not required Ceriodaphnia dubia (water flea): No failures on file during the past 5 years

Failed Test Dates during previous 5 years by Species:

Pimephales promelas (Fathead minnow): Testing periods of: 4/1/05-6/30/05 (lethal & sub-

lethal); 10/1/07-12/31/07 (sub-lethal); 4/1/08-

6/30/08 (lethal & sub-lethal)

Daphnia pulex (water flea): N/A - Testing of species was not required

Ceriodaphnia dubia (water flea): No failures on file during the past 5 years

Previous TRE Activities:

In June, 1991, an EPA Order for Information No. VI-91-1193 required the City of Abbeville to initiate a toxicity reduction evaluation (TRE). Subsequently, a modification was made to the May 17, 1990 permit to include a whole effluent toxicity (WET) limit of

<sup>&</sup>lt;sup>1</sup> This facility will have a three year compliance schedule to meet toxicity testing requirements implemented into the permit renewal. The biomonitoring frequency shall be quarterly for the life of the permit.

100% which was based upon EPA review of the permittee's Toxicity Reduction Report which indicated toxicity was caused by ammonia and/or organics in the effluent. The WET limit was continued in subsequent renewals of the permit. During the term of the permit effective March 1, 1998, no lethal or sub-lethal failures were exhibited to either species. The WET limit was removed in the renewal permit effective September 1, 2004. In addition, an ammonia limit was included in this permit.

Additional Requirements (including WET Limits) Rationale / Comments Concerning Permitting:

The City of Abbeville/Abbeville WWTF owns and operates an existing publicly owned treatment works serving the City of Abbeville, Vermilion Parish, Louisiana. LPDES Permit LA0039748, effective September 1, 2004, contained freshwater chronic biomonitoring as an effluent characteristic of Outfall 001 for Ceriodaphnia dubia and Pimephales promelas. The effluent series consisted of 31%, 41%, 55%, 73%, and 98% concentrations, with the 98% effluent concentration being defined as the critical biomonitoring dilution. The testing was to be performed quarterly for Ceriodaphnia dubia and Pimephales promelas. Data on file indicate that the permittee has experienced 2 lethal and 3 sub-lethal failures to the Pimephales promelas during the past five years.

This facility has experienced several lethal and sub-lethal biomonitoring failures during the previous permit cycle. A reasonable potential analysis also shows that reasonable potential for future lethal and sub-lethal toxicity exists for the City of Abbeville/Abbeville WWTF. LDEQ does not recommend a Whole Effluent Toxicity (WET) Limit be implemented immediately upon permit reissuance. Rather, LDEQ recommends that a three year compliance schedule be incorporated into LA0039748. The purpose of this compliance schedule is to attain compliance with the WET limit. After this three year period expires, the WET limit stated in Part 1 of LA0039748 shall become effective.

It is recommended that freshwater chronic biomonitoring (with a WET limit) be an effluent characteristic of Outfall 001 (discharge of 3.1 mgd) in LA0039748. The effluent dilution series shall be 31%, 41%, 55%, 73%, and 98% concentrations, with the 98% effluent concentration being defined as the critical biomonitoring dilution. The recommended biomonitoring frequency shall be once per quarter for *Ceriodaphnia dubia* and *Pimephales promelas* for the life of the permit.

This recommendation is in accordance with the LDEQ/OES Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards, Water Quality Management Plan Volume 3. Version 6 (April 16, 2008), and the Best Professional Judgment (BPJ) of the reviewer.

# Reasonable Potential Analysis for WET

Facility Name	City of	Abbeville WWTF		
Type of Testing	Chro	nic Freshwater	<u> </u>	
LPDES Permit Number	LA0039748		Outfall number	1
Proposed Critical Dilution	98	* Critical Dilution in draft permit, do r	not use % sign.	

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Tesi Daia	<u> </u>		brate	ens only. Fifty	percent should	Invert		
	Lethal	Sublethal		Sublethal	Lethal			
Date (dd/mm/yy)		NOEC			NOEC			TU
10/1/04-12/31/04	98	98		1.02	98			1.02
1/1/05-3/31/05	98	98		1.02	98	98	1.02	1.02
4/1/05-6/30/05	30	30	3.33	3.33	98	98	1.02	1.02
7/1/05-9/30/05	98	98		1.02	98	98		1.02
10/1/05-12/31/05	98	98	1.02	1.02	98			1.02
1/1/06-3/31/06	98	98	1.02	1.02	98			1.02
4/1/06-6/30/06	98	98	1.02	1.02	98	98	1.02	1.02
7/1/06-9/30/06	98	98		1.02	98			1.02
10/1/06-12/31/06	98			1.02				1.02
1/1/07-3/31/07	98			1.02	98	98		1.02
4/1/07-6/30/07	98			1.02	98	98		1.02
7/1/07-9/30/07	98			1.02				1.02
10/1/07-12/31/07	98			1.37				1.02
1/1/08-3/31/08	98			1.02				1.02
4/1/08-6/30/08	55			1.82				1.02
7/1/08-9/30/08	98			1.02				1.02
1/1/09-3/31/09	98	98	1.02	1.02	98	98	1.02	1.02
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Reasonable Potential Analysis for WET City of Abbeville WWTF Facility Name Type of Testing Chronic Freshwater LPDES Permit Number LA0039748 Outfall number **Proposed Critical Dilution** 98 \* Critical Dilution in draft permit, do not use % sign. Test Data Enter data in yellow shaded cells only. Fifty percent should be entered as 50. Vertebrate Invertebrate Lethal Sublethal Lethal Sublethal Lethal Sublethal Lethal Sublethal Date (dd/mm/yy) NOEC NOEC NOEC TU NOEC TU TU ΤU Min NOEC Observed 30 98 30 98 TU at Min Observed 3.33 3.33 1.02 1.02 Count 17 17 Count 17 17 Mean 1.203 1.224 Mean 1.020 1.020 0.581 Std. Dev. 0.582 Std. Dev. 0.000 0.000 CV 0.5 0.5 CV 0 0 1.4 **RPMF** 1.4 1.1 1.1 1.000 Reasonable Potential Acceptance Criteria Vertebrate Lethal Reasonable Potential exists, Permit requires WET monitoring and WET limi 4.573 4.573 Vertebrate Sublethal Reasonable Potential exists, Permit requires WET monitoring and WET limi Reasonable Potential exists, Permit requires WET monitoring and WET limi Invertebrate Lethal 1.100 Invertebrate Sublethal 1.100 Reasonable Potential exists, Permit requires WET monitoring and WET limi

#### NOTES:

Permit effective 03/01/98 contained a critical dilution of 100% effluent. For all passing tests conducted under the previous permit cycle, LDEQ has used a default NOEC value of 98% per EPA Region VI guidance.

Where toxicity was so great in a test that all effluent dilutions failed and the NOEC was reported as zero percent effluent dilution ("0"), the Reasonable Potential calculation was performed substituting the next lower whole number of the lowest concentration of effluent tested ("30"). This results in the introduction of some bias in the permittee's favor.

# PRETREATMENT EVALUATION AND RECOMMENDATION

FACILITY NAME: City of Abbeville WWTP

CITY:

Abbeville

PARISH:

Vermilion

PERMIT #:

LA0039748

**DESIGN FLOW:** 

3.1 MGD

ESTIMATED OR EXPECTED TREATED WASTEWATER FLOW: 1.79 MGD

OTHER POTWS IN SYSTEM: N/A

# INDUSTRIES LISTED IN MANUFACTURERS GUIDE AND/OR LPDES PERMIT APPLICATION:

Industry Name	Type of Industry	Direct or Indirect Discharger
Ambar Fluids, LLP	Oil field services	Direct <sup>1</sup>
Bergeron Machine Shop Inc.	Machine shop, jobbing, and repair services	Direct <sup>2</sup>
BJ Services Co.	Oil and gas well casing cement service	N/A <sup>3</sup>
Blue Water Environmental Inc.	Manufactures oil and gas field machinery; environmental consultant	N/A <sup>3</sup>
Broussard Brothers Inc.	Tugboat services; oil and gas well construction, repair, and dismantling service	Direct <sup>4</sup>
C S Steen Syrup Mill Inc.	Manufactures flavoring extracts and syrups; manufactures cane syrup from purchased raw sugar	Indirect <sup>5</sup>
Construction Resources Link	Fabricates structural metal for ships	Direct <sup>6</sup>

Sanitary wastewater from this facility is regulated via LDEQ General Permit LAG541053 and storm water discharges are regulated by LDEQ Stormwater General Permit LAR05N058.

<sup>&</sup>lt;sup>2</sup> Sanitary wastewater from this facility is regulated via LDEQ General Permit LAG532627.

<sup>&</sup>lt;sup>3</sup> This facility is not connected to the City of Abbeville WWTP.

<sup>&</sup>lt;sup>4</sup> Sanitary wastewater from this facility is regulated via LDEO General Permit LAG532701.

<sup>&</sup>lt;sup>5</sup> The discharge is process and sanitary wastewater; however, pretreatment standards have not been developed for this industry.

<sup>&</sup>lt;sup>6</sup> The wastewater from this facility is regulated by LDEQ Light Commercial General Permit LAG480566.

Industry Name	Type of Industry	Direct or Indirec Discharger
Dehart Shipyard	Builds and repairs barges; machine shop, jobbing and repair services; boat repair service	Indirect 7
Graham Gulf Inc.	Manufactures oil and gas drilling rigs and equipment	N/A <sup>8</sup>
Grand Isle Shipyard Inc. – Abbeville Yard	Oil field services; manufactures oil and gas field machinery; steel fabricator; steel mill	N/A <sup>8</sup>
Gulf Coast Marine Fabricators	Manufactures oil field machinery and equipment; roustabout service	N/A <sup>8</sup>
Intracoastal City Dry Dock	Builds and repairs ships	Direct 9
Louisiana State Newspapers Inc.	Publishes and prints newspapers	Indirect <sup>10</sup>
M-I LLC	Wholesales chemicals and allied products; oil field services	Direct 11
Metal Coatings LLC	Manufactures painting, coating and hot dipping	N/A <sup>8</sup>
Noble Energy Inc.	Oil and gas well pumping service	N/A <sup>8</sup>
Offshore Cleaning Systems LLC	Shore cleaning and maintenance service; manufactures specialty cleaning products	N/A <sup>8</sup>
Omega Protein Corp.	Manufactures animal and marine fats and oils; fresh or frozen fish and seafood processing	Direct 12
Riviana Foods Inc.	Rice milling; rice drying services; manufactures flour and other grain mill products	Indirect 13
Safety Analysis Team Inc.	Oil field services	Direct 14

<sup>&</sup>lt;sup>7</sup> The discharge is sanitary wastewater only. Storm water discharges are regulated by LDEQ Stormwater General Permit LAR05N935.

This facility is not connected to the City of Abbeville WWTP.

The newspapers are sent offsite for printing; the discharge is sanitary wastewater only.

The process wastewater discharges from this facility are authorized under LPDES Permit LA0004774.

The process wastewater discharges from this facility are authorized under LPDES Permit LA0102211 and Stormwater discharges are regulated by LDEQ Stormwater General Permit LAR05N631.

The wastewater from this facility is regulated by LDEQ Light Commercial General Permit LAG480576.

The discharge is process and sanitary wastewater; however, pretreatment standards have not been developed for this industry. This facility pretreats the wastewater prior to discharging to the WWTP.

The process wastewater discharges from this facility are authorized under LPDES Permit LA0124087.

Industry Name	Type of Industry	Direct or Indirect Discharger
Southern Gulf Inc.	Nautical repair service; bridge construction; oil and gas well building, repairing, and dismantling service; oil equipment rental service	N/A <sup>15</sup>
SPT Energy Group	Real estate investors; oil field services	Indirect <sup>16</sup>
Stallion Offshore Quarters, Inc. 17	Oil field services; new industrial building construction	N/A <sup>15</sup>
Transvac LLC	Oil field haulage service	Direct 18
Vermilion Janitorial & Indl.	Wholesales janitorial equipment and supplies	Indirect <sup>16</sup>

### STANDARD LANGUAGE RECOMMENDATION AND JUSTIFICATION:

Due to the absence of pretreatment categorical standards for the indirect discharges listed above or because the discharge is of sanitary wastewater only, it is recommended that LDEQ Option 1 Pretreatment Language be included in LPDES Permit LA0039748. This language is established for municipalities that do not have either an approved or required Pretreatment program. This recommendation is in accordance with 40 CFR Part 403 regulations, the General Pretreatment Regulations for Existing and New Sources of Pollution contained in LAC Title 33, Part IX, Chapter 61 and the Best Professional Judgement (BPJ) of the reviewer.

<sup>15</sup> This facility is not connected to the City of Abbeville WWTP.

<sup>&</sup>lt;sup>16</sup> The discharge is sanitary wastewater only.

<sup>17</sup> Formerly Abbeville Offshore Quarters

<sup>&</sup>lt;sup>18</sup> Sanitary wastewater from this facility is regulated via LDEQ General Permit LAG532922.